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VOLUME II

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EVALUATION STUDY OF THE OXIDATION-CORROSION CHARACTERISTICS OF AIRCRAFT TURBINE ENGINE LUBRICANTS

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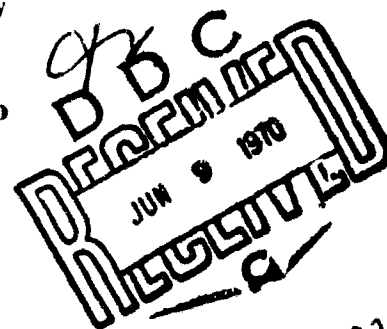
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TECHNICAL REPORT AFAPL-TR-70-10, VOLUME II

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Air Force Aero Propulsion Laboratory
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234

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AFAPL-TR-70-10
VOLUME II

EVALUATION STUDY OF THE OXIDATION-CORROSION CHARACTERISTICS OF AIRCRAFT TURBINE ENGINE LUBRICANTS

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FOREWORD

This report was prepared by Southwest Research Institute, 8500 Culebra Road, San Antonio, Texas, under Contract F33615-69-C-1295, Project No. 3048. The work was administered by the Lubrication Branch, Air Force Aero Propulsion Laboratory (AFAPL), Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. The project engineers were Messrs. G. A. Beane, L. J. DeBrohun, and H. A. Smith (APFL).

This report covers one phase of work performed under the subject contract. This report was submitted by the authors in January 1970.

This technical report has been reviewed and is approved.



H. F. JONES
Chief, Lubrication Branch,
Fuel, Lubrication, and
Hazards Division
Air Force Aero Propulsion
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ABSTRACT

Volume II of this report contains a compilation of the individual test data sheets for all tests reported in Volume I. The data sheets are presented in the order of test number.

This abstract is subject to special export controls and each transmittal to foreign nationals may be made only with prior approval of the Fuel, Lubrication, and Hazards Division (APF), Air Force Aero Propulsion Laboratory, Wright-Patterson Air Force Base, Ohio.

TEST NO. 127-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-60-8 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No. mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.12	—	4.20	0.18	—	—	—	—
16 hr	18.89	17.2	4.80	0.45	42.1	—	—	—
24 hr	21.74	34.9	5.34	0.59	63.0	—	—	—
40 hr	41.29	156	8.71	1.13	96.6	—	—	—
48 hr	79.03	390	14.29	1.67	101.3	60	1.14	9.66
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:		200-mesh filter	None (a)		
	Ti	+0.04			Centrifuge, vol %			
	Ag	+0.06			—			
	Steel	+0.08			—			
	Cu	-0.08			—			
	Mg	+0.02	Tube deposits:		Below oil level	None		
				At and above oil level	None			
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
					Sample temperature, °F		385	
				Sample volume, ml		200		
				Air rate, liter/hr		130		
				Condensate return		No		
(a) Insufficient sample.								

TEST NO. 127-2. RESULTS OF NONREFLUX OXIDATION CORROSION TEST ON O-60-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	12.13		3.17	0.19					
16 hr	13.47	11.0	3.48	0.65	31.2				
24 hr	13.72	13.1	3.52	0.72	46.5				
40 hr	14.52	19.7	3.63	0.93	73.8				
48 hr	15.19	25.2	3.65	1.10	85.0	50	2.33	11.21	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	+0.22	Sludge in oil:		200-mesh filter	None 4.0		
		Ti	+0.22			Centrifuge, vol %			
		Ag	+0.24						
		Steel	+0.28						
		Cu	+0.22						
		Mg	+0.26	Tube deposits:		Below oil level	L carbon L carbon		
Metal discoloration, deposits, pitting, or etching:		At and above oil level							
		Al	M carbon						
		Ti	M carbon						
		Ag	M carbon						
		Steel	M carbon						
		Cu	M carbon						
Mg	M carbon	Test Conditions							
				Sample temperature, °F		385			
				Sample volume, ml		200			
				Air rate, liter/hr		130			
				Condensate return		No			

TEST NO. 127-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-61-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.67		4.11	0.39				
16 hr	17.38	10.9	4.47	0.91	35.2			
24 hr	18.50	18.1	4.75	0.91	51.2			
40 hr	22.93	46.3	5.70	0.91	78.7			
48 hr	29.59	88.4	7.09	1.17	88.8	60	2.29	10 98
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.08	Sludge in oil: 200-mesh filter Centrifuge, vol %		None Trace		
		Ti	+0.02					
		Ag	+0.02					
		Steel	+0.47					
		Cu	+0.26					
		Mg	+0.12					
Metal discoloration, deposits, pitting, or etching:		Al	L brown	Tube deposits: Below oil level At and above oil level		L var L var		
		Ti	L green					
		Ag	Brown					
		Steel	L green					
		Cu	L carbon					
		Mg	L carbon					
Test Conditions								
		Sample temperature, °F		385				
		Sample volume, ml		200				
		Air rate, liter/hr		130				
		Condensate return		No				

TEST NO. 127-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.51	-	3.84	0.02				
16 hr	17.46	12.6	4.15	0.58	18.6			
24 hr	18.95	22.2	4.40	0.67	32.5			
40 hr	23.40	50.9	5.42	0.94	52.9			
48 hr	26.72	72.3	5.64	1.21	57.6	42	1.62	9.09
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter None				
		Ti	+0.02	Centrifuge, vol % None				
		Ag	0.00					
		Steel	+0.02	Tube deposits: Below oil level L var				
		Cu	-0.18	At and above oil level L var				
		Mg	+0.04					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Brown	Sample temperature, °F 385				
		Ag	L yellow	Sample volume, ml 200				
		Steel	Blue	Air rate, liter/hr 130				
		Cu	Brown	Condensate return No				
		Mg	No change					

TEST NO. 127-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	15.01		3.93	0.11	-				
16 hr	16.46	9.7	4.26	0.24	34.2				
24 hr	17.33	15.5	4.45	0.90	50.5				
40 hr	21.78	45.1	5.43	1.26	81.1				
48 hr	32.04	113	7.63	1.95	92.5	55	1.69	10.98	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	+0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %		None (a)			
		Ti	+0.02						
		Ag	+0.06	Tube deposits: Below oil level At and above oil level		L var L var			
		Steel	+0.06						
		Cu	-0.02						
		Mg	0.00						
Metal discoloration, deposits, pitting, or etching:		Al	L pink	Test Conditions					
		Ti	Tan						
		Ag	L pink	Sample temperature, °F		385			
		Steel	Green	Sample volume, ml		200			
		Cu	Orange	Air rate, liter/hr		130			
		Mg	No change	Condensate return		No			
(a) Insufficient sample.									

TEST NO. 127-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.79		4.70	0.24				
16 hr	17.99	1.1	5.07	0.75	33.6			
24 hr	21.12	18.7	5.42	0.82	49.2			
40 hr	26.21	47.3	6.49	1.25	78.3			
48 hr	38.79	118	7.43	22.4	82.9	57	2.68	10.67
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %			None Trace		
	Ti	+0.02						
	Ag	0.00	Tube deposits: Below oil level At and above oil level			L var L var		
	Steel	+0.02						
	Cu	-0.25						
	Mg	+0.10						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions					
	Ti	Blue						
	Ag	No change	Sample temperature, °F		385			
	Steel	L green	Sample volume, ml		200			
	Cu	L etching	Air rate, liter/hr		130			
	Mg	L yellow	Condensate return		No			

TEST NO. 137-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-13 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	vis, cs/210°F	Neut. No., mg KOH/g	Overhead W/t, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.00	—	4.24	0.25	—			
16 hr	17.80	11.2	4.60	0.76	38.2			
24 hr	19.24	20.2	4.94	0.79	54.7			
40 hr	25.36	58.5	6.25	1.10	83.8			
48 hr	38.97	144	9.11	1.54	93.0	57	1.91	10.83
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	+0.02			Trace		
		Ag	-0.02					
		Steel	0.00					
		Cu	-0.16					
		Mg	+0.04					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Tube deposits: Below oil level At and above oil level		L var		
		Ti	L blue			L var		
		Ag	Tan					
		Steel	Blue					
		Cu	Gold					
		Mg	L yellow					
Test Conditions								
Sample temperature, °F					385			
Sample volume, inl					200			
Air rate, liter/hr					130			
Condensate return					No			

TEST NO. 137-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-16 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.84	—	4.45	0.22	—			
16 hr	18.82	11.8	4.85	0.76	38.0			
24 hr	20.31	20.6	5.18	0.82	53.9			
40 hr	25.69	52.6	6.31	1.10	82.8			
48 hr	28.58	69.7	6.11	13.96	94.8	57	1.37	10.60
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	+0.02			Trace		
		Ag	-0.02					
		Steel	+0.04					
		Cu	-0.16					
		Mg	+0.08					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Tube deposits: Below oil level At and above oil level		L var		
		Ti	L blue			L var		
		Ag	L yellow					
		Steel	Blue					
		Cu	Gold					
		Mg	L yellow					
Test Conditions								
Sample temperature, °F					385			
Sample volume, ml					200			
Air rate, liter/hr					130			
Condensate return					No			

TEST NO. 137-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-63-8 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.77	—	3.50	0.15	—	—	—	—
16 hr	14.79	7.4	3.65	0.43	21.2	—	—	—
24 hr	15.14	9.9	3.72	0.51	30.4	—	—	—
40 hr	15.99	16.1	3.86	0.59	47.0	—	—	—
48 hr	16.49	19.8	4.01	0.50	54.0	35	1.71	11.42
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil:		200-mesh filter	None	
		Ti	+0.04			Centrifuge, vol %	0.2	
		Ag	-0.04					
		Steel	-0.04					
		Cu	-0.62					
		Mg	-0.12					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Tube deposits:		Below oil level	None	
		Ti	Tan			At and above oil level	L ar	
		Ag	L yellow					
		Steel	Blue					
		Cu	H pitting					
		Mg	Gray					
					Test Conditions			
					Sample temperature, °F		385	
					Sample volume, ml		200	
					Air rate, liter/hr		130	
					Condensate return		No	

TEST NO. 137-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-63-16 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.47	—	4.34	0.29	—			
16 hr	19.01	15.4	4.92	0.65	37.7			
24 hr	21.30	29.3	5.36	0.65	54.3			
40 hr	30.09	82.7	7.26	0.93	81.6			
48 hr	44.47	170	10.24	1.14	89.1	56	1.75	9.90
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	0.00			Trace		
		Ag	0.00					
		Steel	-0.02					
		Cu	-0.02					
		Mg	+0.08					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Blue					
		Ag	No change					
		Steel	Yellow					
		Cu	L brown					
		Mg	No change					
				Sample temperature, °F		385		
				Sample volume, ml		200		
				Air rate, liter/hr		130		
				Condensate return		No		

TEST NO. 137-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON Q-64-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.84	—	4.29	0.11	—	—	—	—
16 hr	18.31	8.7	4.56	0.86	22.8	—	—	—
24 hr	18.80	11.6	4.69	0.96	31.7	—	—	—
40 hr	20.20	20.0	4.96	1.45	47.9	—	—	—
48 hr	21.42	27.2	5.22	1.69	55.0	36	3.11	11.21
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	Trace
			Ag	0.00				
			Steel	0.00	Tube deposits:		Below oil level	L var
			Cu	-0.10			At and above oil level	L var
			Mg	-0.02				
Metal discoloration, deposits, pitting, or etching:			Al	Gray	Test Conditions			
			Ti	Blue	Sample temperature, °F		385	
			Ag	No change	Sample volume, ml		200	
			Steel	Blue-green	Air rate, liter/hr		130	
			Cu	L brown	Condensate return		No	
			Mg	Gray				

TEST NO. 143-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON Q-61-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.67	—	4.11	0.39	—	—	—	—
16 hr	17.54	11.0	4.50	0.87	38.0	—	—	—
24 hr	18.85	20.3	4.80	0.89	55.1	—	—	—
40 hr	24.34	55.3	5.99	0.89	82.0	—	—	—
48 hr	34.21	118	8.19	1.38	90.5	54	2.03	11.08
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.04	Sludge in oil:		200-mesh filter	None
			Ti	+0.06			Centrifuge, vol %	Trace
			Ag	+0.24				
			Steel	+0.02	Tube deposits:		Below oil level	L var
			Cu	+0.26			At and above oil level	L var
			Mg	+0.12				
Metal discoloration, deposits, pitting, or etching:			Al	L brown	Test Conditions			
			Ti	L green	Sample temperature, °F		385	
			Ag	Brown	Sample volume, ml		200	
			Steel	Green-red	Air rate, liter/hr		130	
			Cu	L carbon	Condensate return		No	
			Mg	Brown				

TEST NO. 143-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.01	—	3.93	0.11	—			
16 hr	16.48	9.8	4.24	0.88	34.9			
24 hr	17.41	16.0	4.47	0.82	51.9			
40 hr	21.73	44.8	4.52	0.99	84.1			
48 hr	30.22	101	7.36	1.45	96.6	58	1.68	11.06
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None (a)		
		Ti	+0.02					
		Ag	+0.04	Tube deposits: Below oil level At and above oil level		L var L var		
		Steel	+0.06					
		Cu	-0.04					
		Mg	+0.02					
Metal discoloration, deposits, pitting, or etching:		Al	Pink	Test Conditions				
		Ti	Pink					
		Ag	L pink	Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No				
		Steel	Green					
		Cu	Orange					
		Mg	Tan					
(a) Insufficient sample.								

TEST NO. 143-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	17.79	—	4.70	0.24	—				
16 hr	20.02	12.5	5.15	0.86	36.6				
24 hr	21.89	23.0	5.57	0.84	53.5				
40 hr	28.96	62.8	7.19	1.18	83.1				
48 hr	40.68	129	9.59	1.78	93.0	58	2.02	11.01	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None Trace			
		Ti	-0.02						
		Ag	+0.06	Tube deposits: Below oil level At and above oil level		L var L var			
		Steel	0.00						
		Cu	-0.10						
		Mg	+0.02						
Metal discoloration, deposits, pitting, or etching:		Al	L pink	Test Conditions					
		Ti	Purple						
		Ag	No change	Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No					
		Steel	Green						
		Cu	L yellow						
		Mg	L yellow						

TEST NO. 143-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-12 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.79	—	3.52	0.25	—	—	—	—
16 hr	14.71	6.7	3.70	0.88	16.0	—	—	—
24 hr	15.39	11.6	3.98	0.86	22.9	—	—	—
40 hr	15.95	15.7	4.04	1.11	35.5	—	—	—
48 hr	15.78	14.4	3.86	1.27	41.0	31	2.85	11.95
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.26	Sludge in oil:		200-mesh filter	None
			Ti	+0.36			Centrifuge, vol %	1.6
			Ag	+0.24	Tube deposits:		Below oil level	L carbon
			Steel	+0.28			At and above oil level	L carbon
			Cu	-0.16				
			Mg	+0.30				
Metal discoloration, deposits, pitting, or etching:			Al	L carbon	Test Conditions			
			Ti	L carbon	Sample temperature, °F		385	
			Ag	L carbon	Sample volume, ml		200	
			Steel	L carbon	Air rate, liter/hr		130	
			Cu	M carbon	Condensate return		No	
			Mg	L carbon				

TEST NO. 143-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	27.50	—	5.08	0.07	—	—	—	—
16 hr	29.54	7.4	5.35	0.19	4.5	—	—	—
24 hr	30.64	11.4	5.45	0.25	6.1	—	—	—
40 hr	31.48	14.5	5.61	0.53	8.9	—	—	—
48 hr	32.65	18.7	5.72	0.38	10.1	15	3.33	21.54
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	-0.06	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	+0.06	Tube deposits:		Below oil level	None
			Steel	+0.04			At and above oil level	None
			Cu	-0.10				
			Mg	+0.02				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	Tan	Sample temperature, °F		385	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			Cu	Purple	Condensate return		No	
			Mg	No change				

TEST NO. 149-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-21 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.56	—	3.55	0.07				
18 hr	21.23	36.4	4.32	3.93	42.3	24	14.23	13.86
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	+0.06			Centrifuge, vol %	None
			Ag	+0.02	Tube deposits:		Below oil level	None
			Steel	+0.02			At and above oil level	None
			S. S.	+0.06				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	L tan	Sample temperature, °F		425	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			S. S.	L brown	Condensate return		No	

TEST NO. 149-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-22 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	18.28	—	4.09	0.17				
18 hr	19.46	6.5	4.28	0.57	38.9	22	6.09	14.87
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	+0.64			Centrifuge, vol %	None
			Ag	-0.04	Tube deposits:		Below oil level	None
			Steel	+0.04			At and above oil level	None
			S. S.	+0.08				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	Tan	Sample temperature, °F		425	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			S. S.	Tan	Condensate return		No	

TEST NO. 150-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-21 AT 450°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.56	—	3.55	0.07				
18 hr	806.7	5080	44.48	15.10	119.4	68	68.6	10.36
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	-0.12	Tube deposits:		Below oil level	None
			Steel	+0.02			At and above oil level	None
			S. S.	+0.02				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	L tan	Sample temperature, °F		450	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue-green	Air rate, liter/hr		130	
			S. S.	L brown	Condensate return		No	

TEST NO. 150-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-22 AT 450°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial 18 hr	18.28 244.0	1235	4.09 20.46	0.17 9.99	112.9	65	61.3	10.84
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:		200-mesh filter	None		
	Ti	0.00			Centrifuge, vol %	None		
	Ag	0.00	Tube deposits:		Below oil level	None		
	Steel	+0.08			At and above oil level	None		
	S. S.	+0.02						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions					
	Ti	L tan						
	Ag	Brown						
	Steel	Blue-green						
	S. S.	Tan						
Sample temperature, °F			450					
Sample volume, ml			200					
Air rate, liter/hr			130					
Condensate return			No					

TEST NO. 163-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.51		3.84	0.02	
1 hr	17.61	13.5	4.18	0.58	
2 hr	19.15	24.0	4.45	0.63	
3 hr	23.57	51.9	5.14	0.91	
4 hr	26.83	73.0	5.65	1.12	43
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:	
		Ti	+0.02		
		Ag	+0.02	Tube deposits:	
		Steel	+0.04		
		Cu	-0.14		
		Mg	+0.04		
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions	
		Ti	Brown	Sample temperature, °F	
		Ag	Yellow	Sample volume, ml	
		Steel	Blue	Air rate, liter/hr	
		Cu	Blue-brown	Condensate return	
		Mg	L yellow	Yes	

TEST NO. 163-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.79	-	4.70	0.24	
16 hr	19.65	10.5	5.08	0.79	
24 hr	21.26	19.5	5.43	0.82	
40 hr	26.77	50.5	6.63	1.13	
48 hr	26.53	49.1	5.91	10.78	54
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None Trace		
			Tube deposits: Below oil level At and above oil level		
			L var L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 163-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-16 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.84	-	4.45	0.22	
16 hr	18.54	10.1	4.78	0.80	
24 hr	19.83	17.8	5.07	0.81	
40 hr	23.89	41.9	6.01	1.20	
48 hr	35.35	110	6.94	21.9	57
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None Trace		
			Tube deposits: Below oil level At and above oil level		
			L var L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 163-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-63-16 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.47	—	4.34	0.29	
16 hr	18.65	13.2	4.80	0.62	
24 hr	20.73	25.9	5.24	0.67	
40 hr	28.84	75.1	6.98	0.84	
48 hr	41.65	153	9.67	1.17	55
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			L var		
			At and above oil level		
			L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 164-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.01	—	3.93	0.39	
16 hr	16.43	9.5	4.24	0.86	
24 hr	17.29	15.2	4.37	0.86	
40 hr	20.80	38.6	5.23	0.91	
48 hr	26.93	79.4	6.56	1.14	54
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			M var		
			At and above oil level		
			L carbon		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 164-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.79	—	4.70	0.24	
16 hr	19.74	11.0	5.10	0.87	
24 hr	21.36	20.1	5.46	0.88	
40 hr	27.25	53.2	6.77	1.09	
48 hr	28.11	58.0	6.56	5.01	54
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			L carbon		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 164-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.50	—	5.08	0.07	
16 hr	29.92	8.8	5.36	0.21	
24 hr	30.72	11.7	5.45	0.24	
40 hr	31.85	15.8	5.68	0.30	
48 hr	32.59	18.5	5.70	0.31	16
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 165-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-62-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.79		4.70	0.24				
16 hr	19.97	12.3	5.18	0.74	37.0			
24 hr	21.76	22.3	5.58	0.79	54.0			
40 hr	29.28	64.6	7.19	1.19	84.0			
48 hr	38.89	119	9.12	2.06	94.0	57	2.41	10.94
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.04	Sludge in oil:		200-mesh filter	None	
		Ti	-0.02			Centrifuge, vol %	Trace	
		Ag	+0.06	Tube deposits:		Below oil level	L var	
		Steel	0.00			At and above oil level	L var	
		Cu	-0.14					
		Mg	-0.04					
Metal discoloration, deposits, pitting, or etching:		Al	L purple	Test Conditions				
		Ti	Dark purple	Sample temperature, °F		385		
		Ag	Tan	Sample volume, ml		200		
		Steel	Blue-green	Air rate, liter/hr		130		
		Cu	Yellow-green	Condensate return		No		
		Mg	L yellow-green					

TEST NO. 166-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.51	—	3.84	0.02	
16 hr	17.54	13.1	4.16	0.53	
24 hr	18.91	21.9	4.32	0.65	
40 hr	23.26	50.0	5.10	0.91	
48 hr	26.15	68.6	5.59	1.08	43

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.10	Sludge in oil:	200-mesh filter	None
	Ti	+0.10		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	0.00			
	Mg	+0.06			
Metal discoloration, deposits, pitting, or etching:	Al	L brown	Test Conditions		
	Ti	Brown	Sample temperature, °F	385	
	Ag	Yellow	Sample volume, ml	200	
	Steel	Blue	Air rate, liter/hr	130	
	Cu	Purple	Condensate return	Yes	
	Mg	L yellow			

TEST NO. 167-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-26 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/216°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.77	—	3.10	0.33	
16 hr	16.38	28.3	3.63	0.26	
24 hr	18.28	43.1	3.90	0.26	
40 hr	22.76	78.2	4.47	0.34	
48 hr	26.32	106	4.92	0.47	52
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level At and above oil level		
			Test Conditions		
			Sample temperature, °F		
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 168-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-26 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/216°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	12.77	—	3.10	0.33	—	—		
16 hr	16.33	27.9	3.62	0.24	49.6			
24 hr	18.21	42.6	3.88	0.29	65.7			
40 hr	22.74	78.1	4.48	0.36	86.7			
48 hr	26.70	109	4.97	0.41	92.3	54	1.37	9.39
Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data			
Weight change, mg/cm ² :					Sludge in oil: 200-mesh filter Centrifuge, vol %			
					Tube deposits: Below oil level At and above oil level			
					Test Conditions			
					Sample temperature, °F			
					Sample volume, ml			
					Air rate, liter/hr			
					Condensate return			

TEST NO. 181-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.71	—	4.67	0.24	—			
16 hr	19.57	10.5	5.08	0.70	39.1			
24 hr	21.41	20.9	5.47	0.88	56.8			
40 hr	23.07	30.3	5.29	10.12	88.2			
48 hr	119.9	577	16.04	28.9	101.7	60	5.55	10.64
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.18	Sludge in oil: 200-mesh filter Centrifuge, vol % None (a)				
		Ti	-0.12					
		Ag	-0.08					
		Steel	+0.02					
		Cu	-0.10					
		Mg	-0.16					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Tube deposits: Below oil level M var At and above oil level M var				
		Ti	Blue-green					
		Ag	L yellow					
		Steel	Peacock					
		Cu	L brown					
		Mg	L pitting					
Test Conditions								
					Sample temperature, °F	385		
					Sample volume, ml	200		
					Air rate, liter/hr	130		
					Condensate return	No		

TEST NO. 181-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-14 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71	—	4.67	0.24	—
16 hr	19.40	9.5	5.01	0.66	—
24 hr	20.88	17.9	5.36	0.84	—
40 hr	23.05	30.2	5.15	13.19	—
48 hr	97.83	452	14.01	30.7	58
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	-0.10	Sludge in oil: 200-mesh filter Centrifuge, vol % None (a)	
		Ti	-0.08		
		Ag	-0.04		
		Steel	+0.02		
		Cu	-0.04		
		Mg	0.00		
Metal discoloration, deposits, pitting, or etching:		Al	No change	Tube deposits: Below oil level M var At and above oil level M var	
		Ti	Blue-green		
		Ag	L yellow		
		Steel	Peacock		
		Cu	L brown		
		Mg	L brown		
				Test Conditions	
				Sample temperature, °F	385
				Sample volume, ml	200
				Air rate, liter/hr	130
				Condensate return	Yes
(a) Insufficient sample.					

TEST NO. 183-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.55		4.61	0.21				
16 hr	19.68	12.1	5.06	0.72	38.6			
24 hr	21.59	23.0	5.50	0.81	55.2			
40 hr	29.19	66.3	7.10	1.23	83.0			
48 hr	43.59	148	10.06	1.85	92.2	59	1.87	10.91
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None			
	Ti	+0.02			None			
	Ag	0.00						
	Steel	0.00						
	Cu	-0.12						
	Mg	0.00						
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Tube deposits: Below oil level At and above oil level		H var			
	Ti	Brown			H var			
	Ag	L yellow						
	Steel	Blue						
	Cu	Brown & green						
	Mg	Yellow						
Test Conditions								
Sample temperature, °F					385			
Sample volume, ml					200			
Air rate, liter/hr					130			
Condensate return					No			

TEST NO. 183-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55		4.61	0.21	
16 hr	19.31	10.0	4.96	0.72	
24 hr	20.92	19.2	5.33	0.79	
40 hr	27.67	57.7	6.79	1.10	
48 hr	40.21	129	9.40	1.68	54
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %	
		Ti	0.00		
		Ag	-0.02		
		Steel	0.00		
		Cu	-0.08		
		Mg	+0.10		
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Tube deposits: Below oil level At and above oil level	
		Ti	Brown		
		Ag	L yellow		
		Steel	Blue		
		Cu	L green & yellow		
		Mg	Yellow		
				Test Conditions	
				Sample temperature, °F	
				Sample volume, ml	
				Air rate, liter/hr	
				Condensate return	

TEST NO. 183-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.72	--	4.67	0.25	--			
16 hr	17.49	-1.3	4.15	0.57	37.7			
24 hr	19.19	+8.3	4.44	0.72	52.3			
40 hr	24.38	+37.6	5.29	1.02	72.2			
48 hr	28.15	+58.9	5.85	1.29	76.3	45	1.68	9.18
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00	Centrifuge, vol %			None	
		Ag	-0.04	Tube deposits:		Below oil level	None	
		Steel	0.00	At and above oil level			L var	
		Cu	-0.18					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	Brown	Sample temperature, °F		385		
		Ag	L yellow	Sample volume, ml		200		
		Steel	Blue	Air rate, liter/hr		130		
		Cu	Brown & green	Condensate return		No		
		Mg	No change					

TEST NO. 183-4. RESULTS OF REFLEX OXIDATION-CORROSION TEST ON O-65-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	—	4.67	0.25	—
16 hr	19.09	7.7	4.91	0.71	—
24 hr	20.45	15.4	5.25	0.82	—
40 hr	25.52	44.0	6.32	1.08	—
48 hr	26.21	47.9	5.82	10.49	—
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter	
		Ti	0.00	Centrifuge, vol %	
		Ag	-0.02	Tube deposits: Below oil level	
		Steel	0.00	At and above oil level	
		Cu	-0.12	L var	
		Mg	+0.08	L var	
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions	
		Ti	Brown & blue	Sample temperature, °F	
		Ag	L yellow	Sample volume, ml	
		Steel	Blue	Air rate, liter/hr	
		Cu	L green & yellow	Condensate return	
		Mg	Yellow	Yes	

TEST NO. 183-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.11	—	3.76	0.07	—	—	—	—
16 hr	17.34	14.8	4.13	0.63	35.2	—	—	—
24 hr	18.92	25.2	4.39	0.73	48.9	—	—	—
40 hr	23.48	55.4	5.13	0.96	68.5	—	—	—
48 hr	26.54	75.6	5.62	1.25	73.1	45	1.82	9.12
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	+0.02			Centrifuge, vol %	None
			Ag	-0.04	Tube deposits:		Below oil level	None
			Steel	0.00			At and above oil level	L var
			Cu	-0.16				
			Mg	-0.04				
Metal discoloration, deposits, pitting, or etching:			Al	L yellow	Test Conditions			
			Ti	Brown	Sample temperature, °F		385	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			Cu	Brown & green	Condensate return		No	
			Mg	No change				

TEST NO. 183-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11	—	3.76	0.07	—
16 hr	19.08	26.3	4.93	0.76	—
24 hr	20.36	34.7	5.22	0.82	—
40 hr	24.48	62.0	6.06	1.21	—
48 hr	41.36	174	7.61	26.4	54
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:	
		Ti	-0.02	200-mesh filter	
		Ag	-0.06	Centrifuge, vol %	
		Steel	0.00	None	
		Cu	-0.27	Tube deposits:	
		Mg	-0.73	Below oil level	
				At and above oil level	
				H var	
				H var	
Metal discoloration, deposits, pitting, or etching:				Test Conditions	
		Al	L yellow	Sample temperature, °F	
		Ti	Brown & blue	385	
		Ag	L yellow	Sample volume, ml	
		Steel	Blue	200	
		Cu	Orange	Air rate, liter/hr	
		Mg	Yellow & pitted	130	
				Condensate return	
				Yes	

TEST NO. 188-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-25 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	28.76	—	5.36	0.00				
18 hr	33.21	15.5	5.87	1.05	17.4	11	6.81	19.57
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	-0.02	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	+0.02	Tube deposits:		Below oil level	None
			Steel	+0.04			At and above oil level	None
			S. S.	-0.02				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	Tan	Sample temperature, °F		425	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			S. S.	Tan	Condensate return		No	

TEST NO. 188-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-15 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	27.20	—	5.04	0.02				
18 hr	32.32	18.8	5.49	0.81	20.1	17	6.15	21.34
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	-0.02	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	-0.02	Tube deposits:		Below oil level	None
			Steel	0.00			At and above oil level	None
			S. S.	-0.04				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	Tan	Sample temperature, °F		425	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			S. S.	L brown	Condensate return		No	

TEST NO. 188-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-16 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	26.69	—	5.13	0.20				
18 hr	59.32	122	8.35	6.80	30.9	20	83.1	11.17
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	-0.02	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	-0.10	Tube deposits:		Below oil level	None
			Steel	0.00			At and above oil level	None
			S. S.	0.00				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	Tan	Sample temperature, °F		425	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			S. S.	L brown	Condensate return		No	

TEST NO. 189-1 RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-25 AT 450°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	28.76	—	5.36	0.00				
18 hr	805.2	2700	42.81	8.38	83.5	50	122.5	9.45
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	-0.06			Centrifuge, vol %	None	
		Ag	-0.24	Tube deposits:		Below oil level	None	
		Steel	+0.08			At and above oil level	None	
		S. S.	-0.06					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L tan					
		Ag	L yellow	Sample temperature, °F	450			
		Steel	Brown	Sample volume, ml	200			
		S. S.	Tan-green	Air rate, liter/hr	130			
				Condensate return	No			

TEST NO. 189-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-15 AT 450°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	27.20	—	5.04	0.02				
18 hr	223.6	722	18.82	8.80	63.0	38	90.6	11.78
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	+0.02			Centrifuge, vol %	None	
		Ag	-0.12	Tube deposits:		Below oil level	None	
		Steel	+0.02			At and above oil level	None	
		S. S.	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Tan					
		Ag	L tan	Sample temperature, °F	450			
		Steel	Blue	Sample volume, ml	200			
		S. S.	L yellow	Air rate, liter/hr	130			
				Condensate return	No			

TEST NO. 191-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-23 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.62	-	3.15	0.20	
16 hr	17.02	34.9	3.85	0.32	
24 hr	20.18	59.9	4.28	0.56	
40 hr	27.72	120	5.25	0.85	
48 hr	31.24	148	5.70	0.86	50
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm²:		Al 0.00 Ti +0.02 Ag 0.00 Steel 0.00 Cu -0.04 Mg +0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None Trace
Tube deposits:			Below oil level At and above oil level		None None
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
		Al No change Ti L tan Ag L yellow Steel Peacock Cu Orange Mg No change	Sample temperature, °F		385
			Sample volume, ml		200
			Air rate, liter/hr		130
			Condensate return		Yes

TEST NO. 191-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-23 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	12.62	—	3.15	0.20	—			
16 hr	17.34	37.4	3.87	0.32	53.0			
24 hr	20.50	62.4	4.31	0.56	68.5			
40 hr	27.44	117	5.21	0.81	79.4			
48 hr	30.46	141	5.57	0.84	80.1	52	1.13	7.90
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	+0.04	Centrifuge, vol %			Trace	
		Ag	0.00	Tube deposits:		Below oil level	None	
		Steel	0.00	At and above oil level			None	
		Cu	-0.02					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L tan	Sample temperature, °F		385		
		Ag	L yellow	Sample volume, ml		200		
		Steel	Peacock	Air rate, liter/hr		130		
		Cu	Orange	Condensate return		No		
		Mg	No change					

TEST NO. 192-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.40	—	3.23	0.08	
16 hr	15.31	14.3	3.53	0.22	
24 hr	16.36	22.1	3.68	0.36	
40 hr	19.06	42.2	4.07	0.61	
48 hr	21.12	57.6	4.35	0.65	44

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	+0.02			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		
	Ti	L brown	Sample volume, ml		
	Ag	I. yellow	Air rate, liter/hr		
	Steel	Blue-brown	Condensate return		
	Cu	Orange			
	Mg	L gray			

TEST NO. 192-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.40	—	3.23	0.08	—	—		
16 hr	15.37	14.7	3.54	0.22	34.1			
24 hr	16.42	22.5	3.68	0.36	47.3			
40 hr	19.25	43.7	4.10	0.61	66.5			
48 hr	21.30	59.0	4.39	0.65	72.0	43	1.23	10.25

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	+0.04			
	Mg	+0.12			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		
	Ti	L brown	Sample volume, ml		
	Ag	L yellow	Air rate, liter/hr		
	Steel	Blue-brown	Condensate return		
	Cu	Orange			
	Mg	L gray			

TEST NO. 195-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.74	—	3.65	0.18	
16 hr	15.56	5.6	3.82	0.81	
24 hr	15.94	8.1	3.88	0.96	
40 hr	17.54	19.0	4.16	2.61	
48 hr	19.24	30.5	4.45	3.28	34
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % Trace		
			Tube deposits: Below oil level None		
			At and above oil level L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 130		
			Condensate return Yes		

TEST NO. 195-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-22 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.18	—	3.72	0.00	
16 hr	15.93	4.9	3.84	0.26	
24 hr	16.22	6.9	3.90	0.53	
40 hr	16.96	11.7	4.00	1.08	
48 hr	17.46	15.0	4.08	1.21	27
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % Trace		
			Tube deposits: Below oil level None		
			At and above oil level None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 130		
			Condensate return Yes		

TEST NO. 195-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-35 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.09	—	3.21	0.19	
16 hr	18.49	41.3	4.04	0.42	
24 hr	21.01	60.5	4.40	0.65	
40 hr	25.08	91.6	4.88	0.81	
48 hr	26.83	105	5.10	0.91	44
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 195-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.74	—	3.65	0.18	—			
16 hr	15.59	5.8	3.86	0.77	15.5			
24 hr	15.96	8.3	3.89	0.95	22.6			
40 hr	17.64	26.5	4.17	2.68	37.3			
48 hr	19.31	31.0	4.46	3.20	43.7	35	8.98	12.63
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :					Sludge in oil: 200-mesh filter			
					Centrifuge, vol %			
					None			
					Trace			
					Tube deposits: Below oil level			
					At and above oil level			
					None			
					L var			
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
					Sample temperature, °F			
					385			
					Sample volume, ml			
					200			
					Air rate, liter/hr			
					130			
					Condensate return			
					No			

TEST NO. 195-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-22 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.18	—	3.72	0.00	—			
16 hr	15.93	4.9	3.84	0.27	15.7			
24 hr	16.23	6.9	3.90	0.56	22.7			
40 hr	16.98	11.9	4.00	1.12	36.2			
48 hr	17.48	15.2	4.08	1.23	41.9	27	2.95	12.70
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	-0.06	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	Trace
			Ag	0.00	Tube deposits:		Below oil level	None
			Steel	0.00			At and above oil level	None
			Cu	-0.04				
			Mg	+0.16				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	L brown	Sample temperature, °F		385	
			Ag	No change	Sample volume, ml		200	
			Steel	Blue-green	Air rate, liter/hr		130	
			Cu	Orange	Condensate return		No	
			Mg	Gray				

TEST NO. 195-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-35 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.09	—	3.21	0.19	—			
16 hr	18.63	42.3	4.05	0.45	48.7			
24 hr	20.96	60.1	4.36	0.68	59.9			
40 hr	25.25	92.9	4.89	0.85	67.9			
48 hr	27.22	108	5.12	0.92	68.9	44	1.40	7.51
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	-0.02	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	Trace
			Ag	-0.04	Tube deposits:		Below oil level	None
			Steel	+0.06			At and above oil level	None
			Cu	-0.08				
			Mg	+0.36				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	L brown	Sample temperature, °F		385	
			Ag	No change	Sample volume, ml		200	
			Steel	Blue-green	Air rate, liter/hr		130	
			Cu	Gold	Condensate return		No	
			Mg	Gray				

TEST NO. 196-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-36 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.33	—	5.31	0.14	
16 hr	30.34	7.1	5.60	0.21	
24 hr	31.15	10.0	5.69	0.32	
40 hr	32.44	14.5	5.85	0.42	
48 hr	33.21	17.2	5.96	0.50	11
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 196-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-38 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.31	—	3.53	0.11	
16 hr	16.08	12.4	3.82	0.10	
24 hr	17.42	21.7	4.06	0.11	
40 hr	21.20	48.1	4.64	0.18	
48 hr	23.72	65.8	4.99	0.23	46
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			Trace		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 196-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-40 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.76	—	3.29	0.06	
16 hr	15.97	16.1	3.66	0.24	
24 hr	17.14	24.6	3.84	0.42	
40 hr	20.17	46.6	4.24	0.59	
48 hr	22.13	60.8	4.52	0.75	43
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 196-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-36 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	28.33	—	5.31	0.14	—			
16 hr	30.33	7.1	5.59	0.21	1.8			
24 hr	31.15	10.0	5.69	0.31	2.7			
40 hr	32.55	14.9	5.87	0.43	4.3			
48 hr	33.36	17.8	5.99	0.45	4.9	12	3.53	19.63
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :					Sludge in oil: 200-mesh filter			
					Centrifuge, vol %			
					None			
					None			
					Tube deposits: Below oil level			
					At and above oil level			
					None			
					None			
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
					Sample temperature, °F			
					385			
					Sample volume, ml			
					200			
					Air rate, liter/hr			
					130			
					Condensate return			
					No			

TEST NO. 196-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-38 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.31	—	3.53	0.11	—			
16 hr	16.21	13.3	3.84	0.10	47.2			
24 hr	17.62	23.1	4.08	0.11	52.0			
40 hr	21.74	51.9	4.72	0.18	72.7			
48 hr	24.60	71.9	5.14	0.20	77.3	46	0.70	9.53
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		Trace		
		Ti	0.00			Trace		
		Ag	-0.04					
		Steel	-0.02					
		Cu	-0.06					
		Mg	+0.61	Tube deposits: Below oil level At and above oil level		None		
Metal discoloration, deposits, pitting, or etching:		None						
		Test Conditions						
Sample temperature, °F					385			
Sample volume, ml					200			
Air rate, liter/hr					130			
Condensate return					No			

TEST NO. 196-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-40 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	13.76	—	3.29	0.06	—				
16 hr	15.98	16.1	3.66	0.25	33.2				
24 hr	17.24	25.3	3.85	0.38	45.9				
40 hr	20.35	47.9	4.29	0.61	63.9				
48 hr	22.64	64.5	4.58	0.67	68.4	43	1.21	9.97	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None			
		Ti	0.00			None			
		Ag	-0.02						
		Steel	0.00						
		Cu	+0.10						
		Mg	+0.51	Tube deposits: Below oil level At and above oil level		None			
Metal discoloration, deposits, pitting, or etching:		Al	No change						
		Ti	L tan						
		Ag	No change						
		Steel	Blue-green						
		Cu	Dark gold						
		Mg	Gray	Test Conditions					
						Sample temperature, °F	385		
						Sample volume, ml	200		
						Air rate, liter/hr	130		
						Condensate return	No		

TEST NO. 197-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-684(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut No., mg KOH/g	Oil Loss, wt %
Initial	16.1	—	4.13	0.15	
16 hr	18.18	12.5	4.49	0.61	
24 hr	19.74	22.2	4.80	0.68	
40 hr	25.48	57.7	5.80	1.12	
48 hr	31.63	95.7	6.84	1.50	51
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil:	200-mesh filter Centrifuge, vol %	None None
			Tube deposits:	Below oil level At and above oil level	L var L var
			Test Conditions		
Metal discoloration, deposits, pitting, or etching:			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	130	
			Condensate return	Yes	
(a) Blend (1:1) of O-65-18 and O-65-21.					

TEST NO. 197-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON ATL-584(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.16	—	4.13	0.15	—	—	—	—
16 hr	18.25	12.9	4.51	0.64	36.4	—	—	—
24 hr	20.07	24.2	4.84	0.71	51.1	—	—	—
40 hr	26.10	61.5	5.93	1.11	75.3	—	—	—
48 hr	32.05	98.3	6.92	1.49	80.8	54	1.82	10.06
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :					Sludge in oil:	200-mesh filter Centrifuge, vol %	None None	
					Tube deposits:	Below oil level At and above oil level	L var L var	
					Test Conditions			
Metal discoloration, deposits, pitting, or etching:					Sample temperature, °F	385		
					Sample volume, ml	200		
					Air rate, liter/hr	130		
					Condensate return	No		
(a) Blend (1:1) of O-65-18 and O-65-21.								

TEST NO. 199-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1115(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.29	—	4.18	0.17	—			
16 hr	18.32	12.5	4.53	0.63	35.8			
24 hr	20.12	23.5	4.68	0.73	51.3			
40 hr	26.36	61.8	5.99	1.17	72.5			
48 hr	33.51	106	7.22	1.48	76.6	53	1.77	10.04
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	-0.02					
		Ag	0.00					
		Steel	-0.02					
		Cu	-0.12					
		Mg	+0.08					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions		Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No		
		Ti	L brown					
		Ag	Tan					
		Steel	L blue					
		Cu	L brown					
		Mg	Tan					
(a) Blend (1:1) of O-65-19 and O-65-21.								

TEST NO. 199-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1116(a) AT 385°F

	Vis cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.66	—	3.96	0.12	—			
16 hr	17.92	14.4	4.35	0.58	38.3			
24 hr	19.66	25.5	4.65	0.67	54.6			
40 hr	24.95	59.3	5.52	1.00	77.6			
48 hr	29.21	86.5	6.22	1.34	83.6	50	1.69	9.57
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	-0.04					
		Ag	-0.02					
		Steel	-0.02					
		Cu	-0.08					
		Mg	+0.06					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L brown					
		Ag	Tan					
		Steel	L blue					
		Cu	L brown					
		Mg	Tan					
		Sample temperature, °F		385				
		Sample volume, ml		200				
		Air rate, liter/hr		130				
		Condensate return		No				
(a) Blend (1:3) of O-65-19 and O-65-21.								

TEST NO. 199-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1117(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.97	—	4.40	0.20	—			
16 hr	18.74	10.4	4.72	0.68	37.2			
24 hr	20.36	20.0	5.05	0.77	54.2			
40 hr	25.90	52.6	6.10	1.32	81.7			
48 hr	33.01	94.5	7.50	1.67	91.0	54	2.00	10.46
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	-0.06					
		Ag	0.00			Tube deposits: Below oil level L var At and above oil level L var		
		Steel	-0.04					
		Cu	-0.12					
		Mg	+0.10					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L blue					
		Ag	Tan					
		Steel	L blue					
		Cu	L brown					
		Mg	Tan	Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No				
(a) Blend (3:1) of O-65-19 and O-65-21.								

TEST NO. 199-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1118(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.28	-	3.84	0.09				
16 hr	17.84	16.8	4.25	0.56	38.2			
24 hr	19.78	29.5	4.58	0.66	53.4			
40 hr	25.10	64.3	5.46	1.04	71.5			
48 hr	28.96	89.5	6.10	1.23	74.7	50	1.63	9.39
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	-0.08					
		Ag	-0.02			Tube deposits: Below oil level L var At and above oil level L var		
		Steel	-0.04					
		Cu	-0.08					
		Mg	+0.08	Test Conditions				
Metal discoloration, deposits, pitting, or etching:		Al	No change					
		Ti	L brown					
		Ag	Tan					
		Steel	L blue					
		Cu	L brown					
		Mg	L gray	Sample temperature, °F		385		
				Sample volume, ml		200		
				Air rate, liter/hr		130		
				Condensate return		No		
(a) Blend (1:9) of O-65-19 and O-65-21.								

TEST NO. 199-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1119(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	17.41	—	4.55	0.23	—				
16 hr	19.14	9.9	4.90	0.67	38.6				
24 hr	20.97	20.4	5.27	0.79	55.8				
40 hr	27.82	59.8	6.65	1.34	84.6				
48 hr	40.12	130	9.10	2.00	93.5	55	2.02	10.70	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	-0.06	Sludge in oil:		200-mesh filter	None		
		Ti	-0.02			Centrifuge, vol %	None		
		Ag	-0.04	Tube deposits:		Below oil level	L var		
		Steel	-0.02					At and above oil level	L var
		Cu	-0.16						
		Mg	+0.08						
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions					
		Ti	Blue						
		Ag	Tan	Sample temperature, °F	385				
		Steel	L blue	Sample volume, ml	200				
		Cu	L brown	Air rate, liter/hr	130				
		Mg	Tan	Condensate return	No				
(a) Blend (9:1) of O-65-19 and O-65-21.									

TEST NO. 200-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.72	-	4.67	0.25				
16 hr	19.62	10.7	5.04	0.69	36.8			
24 hr	21.63	22.1	5.49	0.75	53.6			
40 hr	29.80	68.2	7.24	1.20	80.0			
48 hr	47.24	167	10.94	1.91	87.6	58	1.84	10.87
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	+0.02	Tube deposits:		Below oil level	L var	
		Steel	0.00				L var	
		Cu	-0.08					
		Mg	+0.10					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	Brown-purple	Sample temperature, °F		385		
		Ag	Yellow	Sample volume, ml		200		
		Steel	Blue	Air rate, liter/hr		130		
		Cu	Peacock	Condensate return		No		
		Mg	Yellow					

TEST NO. 200-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/160°F
Initial	15.11	—	3.76	0.07	—			
16 hr	17.54	16.1	4.16	0.57	38.3			
24 hr	19.33	27.9	4.46	0.62	53.9			
40 hr	24.13	59.7	5.23	0.94	74.0			
48 hr	27.44	81.6	5.73	1.21	78.7	47	1.85	9.95
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	+0.02			Centrifuge, vol %	None
			Ag	0.00				
			Steel	0.00	Tube deposits:		Below oil level	L var
			Cu	-0.12			At and above oil level	L var
			Mg	+0.08				
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
			Al	L yellow	Sample temperature, °F		385	
			Ti	Brown-yellow	Sample volume, ml		200	
			Ag	Yellow	Air rate, liter/hr		130	
			Steel	Blue	Condensate return		No	
			Cu	Brown-purple				
			Mg	L yellow				

TEST NO. 200-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	12.13	—	3.17	0.11	—			
16 hr	13.56	11.8	3.45	0.68	32.4			
24 hr	13.90	14.6	3.47	0.68	46.5			
40 hr	14.92	23.0	3.58	0.91	71.3			
48 hr	15.16	25.0	3.76	0.98	82.1	50	2.36	11.11
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.02	Sludge in oil:		200-mesh filter	Trace
			Ti	0.00			Centrifuge, vol %	4.0
			Ag	+0.02				
			Steel	+0.02	Tube deposits:		Below oil level	L carbon
			Cu	+0.14			At and above oil level	L carbon
			Mg	+0.10				
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
			Al	L tan	Sample temperature, °F		385	
			Ti	L tan	Sample volume, ml		200	
			Ag	Yellow	Air rate, liter/hr		130	
			Steel	Blue	Condensate return		No	
			Cu	Dark brown				
			Mg	L brown				

TEST NO. 200-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.13	—	3.17	0.11	
16 hr	13.58	12.0	3.46	0.67	
24 hr	13.98	15.3	3.55	0.68	
40 hr	14.96	23.3	3.63	0.91	
48 hr	15.89	31.0	3.86	1.00	5.2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			2.8		
			Tube deposits: Below oil level		
			L carbon		
			At and above oil level		
			L carbon		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 201-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-11 26(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.21	—	4.14	0.16	—			
16 hr	18.34	13.1	4.53	0.62	37.3			
24 hr	20.05	23.7	4.86	0.68	52.8			
40 hr	26.57	63.9	6.02	1.12	75.2			
48 hr	33.06	104	7.25	1.47	79.4	53	1.77	10.05
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	-0.02					
		Ag	-0.02					
		Steel	+0.04					
		Cu	-0.12					
		Mg	+0.08					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Tan					
		Ag	L tan					
		Steel	Blue					
		Cu	Gold					
		Mg	Tan					
		Sample temperature, °F		385				
		Sample volume, ml		200				
		Air rate, liter/hr		130				
		Condensate return		No				
(a) Blend (1:1) of O-65-18 and O-65-21.								

TEST NO. 201-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1127^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.62	—	3.95	0.12	—			
16 hr	17.91	14.7	4.33	0.61	38.6			
24 hr	19.63	25.7	4.64	0.66	54.9			
40 hr	24.92	59.5	5.54	0.98	78.7			
48 hr	29.18	86.8	6.29	1.31	84.7	49	1.71	9.53
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² : Al -0.02 Ti -0.04 Ag -0.04 Steel +0.02 Cu -0.04 Mg +0.04 Metal discoloration, deposits, pitting, or etching: Al No change Ti Tan Ag L tan Steel Blue Cu Gold Mg Tan					Sludge in oil:		200-mesh filter	None
							Centrifuge, vol %	None
					Tube deposits:		Below oil level	L var
							At and above oil level	L var
					Test Conditions			
					Sample temperature, °F		385	
Sample volume, ml		200						
Air rate, liter/hr		130						
Condensate return		No						
(a) Blend (1:3) of O-65-18 and O-65-21.								

TEST NO. 201-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1128^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.86	—	4.37	0.20	—			
16 hr	18.64	10.6	4.69	0.65	37.0			
24 hr	20.15	19.5	5.00	0.71	53.8			
40 hr	24.45	45.0	5.74	1.93	82.7			
48 hr	56.00	232	9.28	18.64	96.2	60	4.46	10.16
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	-0.06			Centrifuge, vol %	Trace	
		Ag	-0.02	Tube deposits:		Below oil level	L var	
		Steel	+0.02			At and above oil level	L var	
		Cu	-0.12					
		Mg	-0.20					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Blue					
		Ag	Tan	Sample temperature, °F	385			
		Steel	L green	Sample volume, ml	200			
		Cu	Rose	Air rate, liter/hr	130			
		Mg	L pitting	Condensate return	No			
(a) Blend (3:1) of O-65-18 and O-65-21.								

TEST NO. 201-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1129(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.31	—	3.84	0.09	—			
16 hr	17.86	16.7	4.28	0.58	38.8			
24 hr	19.79	29.3	4.60	0.66	53.8			
40 hr	25.35	65.6	5.50	0.98	73.1			
48 hr	29.40	92.0	6.13	1.29	76.2	51	1.60	9.41
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	-0.06			Centrifuge, vol %	None	
		Ag	-0.02			Tube deposits: Below oil level L var At and above oil level L var		
		Steel	0.00					
		Cu	-0.08					
		Mg	+0.02					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Tan					
		Ag	L tan	Sample temperature, °F		385		
		Steel	Blue	Sample volume, ml		200		
		Cu	Gold	Air rate, liter/hr		130		
		Mg	No change	Condensate return		No		
(a) Blend (1:9) of O-65-18 and O-65-21.								

TEST NO. 201-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1130(a) AT 385°F

	Vis, cs/100°F	160°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.30	—	4.50	0.22	—			
16 hr	19.16	10.8	4.90	0.67	38.8			
24 hr	20.69	19.6	5.23	0.71	55.8			
40 hr	23.63	36.6	5.27	9.18	87.2			
48 hr	104.8	506	14.12	23.5	99.6	59	5.19	10.43
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil:		200-mesh filter	None	
		Ti	-0.06			Centrifuge, vol %	None	
		Ag	-0.08			Tube deposits: Below oil level L var At and above oil level L var		
		Steel	+0.02					
		Cu	-0.28					
		Mg	-1.42					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L blue					
		Ag	L tan	Sample temperature, °F	385			
		Steel	Blue	Sample volume, ml	200			
		Cu	L etching	Air rate, liter/hr	130			
		Mg	H pitting	Condensate return	No			
(a) Blend (9:1) of O-65-18 and O-65-21.								

TEST NO. 201-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.55		4.61	0.21	—			
16 hr	19.31	10.0	4.98	0.73	36.5			
24 hr	20.97	19.5	5.35	0.75	53.1			
40 hr	27.92	59.1	6.80	1.12	83.4			
48 hr	31.61	80.1	6.60	14.44	95.5	56	2.64	10.85
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	-0.06			None		
		Ag	-0.04					
		Steel	0.00	Tube deposits: Below oil level At and above oil level		L var		
		Cu	-0.06			L var		
		Mg	+0.14					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L blue					
		Ag	Tan	Sample temperature, °F		385		
		Steel	Blue	Sample volume, ml		200		
		Cu	Gold	Air rate, liter/hr		130		
		Mg	Tan	Condensate return		No		

TEST NO. 202-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-556 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	13.98		3.63	1.66		
16 hr	15.20	8.7	3.89	1.41		
24 hr	16.05	14.8	4.08	1.27		
40 hr	22.38	60.1	4.98	13.04		
48 hr	116.1	730	16.09	27.0	59	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	-0.04	Sludge in oil:	200-mesh filter	None	
	Ti	-0.02		Centrifuge, vol %	None	
	Ag	+0.02		Tube deposits:	Below oil level	L var
	Steel	0.00			At and above oil level	L var
	Cu	-0.24				
	Mg	0.00				
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions			
	Ti	Brown-purple	Sample temperature, °F	385		
	Ag	L yellow	Sample volume, ml	200		
	Steel	Blue-green	Air rate, liter/hr	130		
	Cu	L etching	Condensate return	Yes		
	Mg	No change				

TEST NO. 202-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-561 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	14.43	—	3.77	0.75	64	
16 hr	15.77	9.3	4.03	0.82		
24 hr	16.78	16.3	4.24	0.99		
40 hr	96.90	572	13.31	35.6		
48 hr	Gelled	—	—	39.2		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None	
	Ti	-0.04		Centrifuge, vol %	None	
	Ag	+0.04		Tube deposits:	Below oil level	M var
	Steel	0.00			At and above oil level	M var
	Cu	-1.08				
	Mg	-0.02				
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions			
	Ti	Brown-purple	Sample temperature, °F	385		
	Ag	L yellow	Sample volume, ml	200		
	Steel	Blue-green	Air rate, liter/hr	130		
	Cu	M etching	Condensate return	Yes		
	Mg	No change				

TEST NO. 202-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss. wt %
Initial	17.55	—	4.61	0.21	57
16 hr	19.12	8.9	4.93	0.67	
24 hr	20.66	17.7	5.28	0.73	
40 hr	24.84	41.5	6.11	1.47	
48 hr	57.39	227	9.56	28.0	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %	None	
	Ti	-0.02			
	Ag	0.00			
	Steel	+0.02			
	Cu	-0.20			
	Mg	-0.14			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Tan-purple			
	Ag	L yellow	Sample temperature, °F	385	
	Steel	Blue-green	Sample volume, ml	200	
	Cu	Brown	Air rate, liter/hr	130	
	Mg	Yellow	Condensate return	Yes	

TEST NO. 2024. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 385°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis. cs/100°F
Initial	17.55	—	4.61	0.21	—			
16 hr	19.56	11.5	5.03	0.65	38.8			
24 hr	21.56	22.8	5.48	0.73	56.1			
40 hr	30.35	72.9	7.37	1.14	85.3			
48 hr	48.68	177	11.10	1.66	94.1	59	1.72	10.89
Metal Specimen Data						Test Cell Data		
Weight change, mg/cm ² :		Al	-0.04	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	+0.04	Tube deposits:		Below oil level	L var	
		Steel	0.00			At and above oil level	L var	
		Cu	-0.12					
		Mg	+0.10					
Metal discoloration, deposits, pitting, or etching:				Test Conditions				
		Al	L yellow	Sample temperature, °F		385		
		Ti	Brown	Sample volume, ml		200		
		Ag	L yellow	Air rate, liter/hr		130		
		Steel	Blue	Condensate return		No		
		Cu	Brown-green					
		Mg	Yellow					

TEST NO. 203-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1115^(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.29		4.18	0.17				
16 hr	17.83	9.5	4.46	0.52	28.0			
24 hr	19.13	17.4	4.70	0.61	40.3			
40 hr	23.17	42.4	5.46	0.79	59.3			
48 hr	26.98	65.6	6.18	0.95	64.8	45	1.59	9.91
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00	Centrifuge, vol %			None	
		Ag	+0.06	Tube deposits:		Below oil level	None	
		Steel	+0.02	At and above oil level			L var	
		Cu	-0.10					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	L brown	Sample temperature, °F		375		
		Ag	Yellow	Sample volume, ml		200		
		Steel	Blue	Air rate, liter/hr		130		
		Cu	L yellow	Condensate return		No		
		Mg	Green-brown					
(a) Blend (1:1) of O-65-19 and O-65-21.								

TEST NO. 203-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1116^(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.66	—	3.96	0.12	—			
16 hr	17.40	11.1	4.26	0.50	29.9			
24 hr	18.64	19.0	4.47	0.58	42.7			
40 hr	22.18	41.6	5.10	0.75	63.7			
48 hr	25.07	60.1	5.62	0.85	70.7	41	1.61	9.45
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	0.00			None		
		Ag	+0.08					
		Steel	+0.02					
		Cu	-0.12					
		Mg	+0.02					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Tube deposits: Below oil level At and above oil level		None		
		Ti	L brown			None		
		Ag	Yellow					
		Steel	Blue					
		Cu	Green-brown					
		Mg	L yellow					
					Test Conditions			
					Sample temperature, °F		375	
					Sample volume, ml		200	
					Air rate, liter/hr		130	
					Condensate return		No	
(a) Blend (1:3) of O-65-19 and O-65-21.								

TEST NO. 203-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1117^(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.97	—	4.40	0.20	—			
16 hr	18.24	7.5	4.66	0.56	28.6			
24 hr	19.37	14.1	4.86	0.63	41.9			
40 hr	22.94	35.2	5.58	0.80	65.7			
48 hr	26.58	56.6	6.30	0.93	75.1	44	1.72	10.27
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	0.00					
		Ag	+0.04					
		Steel	+0.02					
		Cu	-0.14					
		Mg	+0.04					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Tube deposits: Below oil level At and above oil level		None None		
		Ti	L brown					
		Ag	Yellow					
		Steel	Blue					
		Cu	L yellow					
		Mg	Green-brown					
				Test Conditions				
				Sample temperature, °F		375		
				Sample volume, ml		200		
				Air rate, liter/hr		130		
				Condensate return		No		
(a) Blend (3:1) of O-65-19 and O-65-21.								

TEST NO. 203-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1118(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	15.28	—	3.84	0.09	—				
16 hr	17.23	12.8	4.17	0.49	29.4				
24 hr	18.58	21.6	4.40	0.53	41.4				
40 hr	22.51	47.3	5.07	0.70	59.1				
48 hr	25.57	67.3	5.57	0.80	63.3	44	1.54	9.27	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil:		200-mesh filter	None		
		Ti	+0.02			Centrifuge, vol %	None		
		Ag	+0.04			Tube deposits:		Below oil level	None
		Steel	+0.02					At and above oil level	None
		Cu	-0.14						
		Mg	0.00						
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions					
		Ti	L brown						
		Ag	Yellow	Sample temperature, °F	375				
		Steel	Blue	Sample volume, ml	200				
		Cu	L yellow	Air rate, liter/hr	130				
		Mg	Green-brown	Condensate return	No				
(a) Blend (1:9) of O-65-19 and O-65-21.									

TEST NO. 203-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1119(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.41	—	4.55	0.23				
16 hr	18.75	7.7	4.82	0.58	30.5			
24 hr	20.06	15.2	5.10	0.64	44.0			
40 hr	24.58	41.2	6.06	0.80	68.0			
48 hr	30.44	74.8	7.28	0.95	77.1	46	1.59	10.53
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² : Al +0.02 Ti 0.00 Ag +0.04 Steel 0.00 Cu -0.14 Mg +0.02					Sludge in oil:		200-mesh filter	None
							Centrifuge, vol %	None
					Tube deposits:		Below oil level	None
							At and above oil level	1 var
Metal discoloration, deposits, pitting, or etching: Al L yellow Ti Brown Ag Yellow Steel Blue Cu Yellow Mg Green-brown					Test Conditions			
					Sample temperature, °F		375	
					Sample volume, ml		200	
					Air rate, liter/hr		130	
					Condensate return		No	
(a) Blend (9:1) of O-65-19 and O-65-21.								

TEST NO. 203-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.72	-	4.67	0.25	-			
16 hr	19.03	7.4	4.91	0.61	28.5			
24 hr	20.23	14.2	5.19	0.69	41.4			
40 hr	24.58	38.7	6.16	0.81	64.9			
48 hr	29.18	64.7	7.21	0.94	74.4	45	1.59	10.68
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	+0.02					
		Ag	+0.06	Tube deposits: Below oil level At and above oil level		None L var		
		Steel	+0.04					
		Cu	-0.14					
		Mg	+0.04					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	Brown					
		Ag	Yellow	Sample temperature, °F		375		
		Steel	Blue	Sample volume, ml		200		
		Cu	Yellow	Air rate, liter/hr		130		
		Mg	Green-brown	Condensate return		No		

TEST NO. 204-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1126(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.21		4.14	0.16				
16 hr	17.81	9.9	4.44	0.53	29.0			
24 hr	19.09	17.8	4.69	0.58	41.0			
40 hr	23.43	44.5	5.51	0.77	59.8			
48 hr	27.65	70.6	6.30	0.97	64.9	46	1.48	9.87
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None		
		Ti	+0.12					
		Ag	+0.02	Tube deposits: Below oil level At and above oil level		None L var		
		Steel	+0.06					
		Cu	0.10					
		Mg	+0.08					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	L brown					
		Ag	Yellow	Sample temperature, °F		375		
		Steel	Blue	Sample volume, ml		200		
		Cu	Green-brown	Air rate, liter/hr		130		
		Mg	Brown	Condensate return		No		
(a) Blend (1:1) of O-65-18 and O-65-21.								

TEST NO. 204-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1127(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.62	—	3.95	0.12	—			
16 hr	17.45	11.7	4.25	0.52	30.9			
24 hr	18.69	19.7	4.48	0.57	43.8			
40 hr	22.41	43.5	5.13	0.72	64.5			
48 hr	25.54	63.5	5.68	0.95	71.0	44	1.54	9.54
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	+0.04			None		
		Ag	+0.04	Tube deposits: Below oil level At and above oil level		None		
		Steel	+0.10			L var		
		Cu	-0.04					
		Mg	+0.06					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	L brown					
		Ag	Yellow	Sample temperature, °F		375		
		Steel	Blue	Sample volume, ml		200		
		Cu	Green-brown	Air rate, liter/hr		130		
		Mg	L yellow	Condensate return		No		
(a) Blend (1:3) of O-65-18 and O-65-21.								

TEST NO. 204-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1128(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.86	-	4.37	0.20	-			
16 hr	18.19	7.9	4.61	0.56	29.4			
24 hr	19.36	14.8	4.85	0.60	42.5			
40 hr	23.27	38.0	5.64	0.79	66.9			
48 hr	26.98	60.0	6.37	0.99	76.0	46	1.65	10.29
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	+0.04			None		
		Ag	0.00	Tube deposits: Below oil level At and above oil level		None		
		Steel	+0.14			L var		
		Cu	-0.10					
		Mg	+0.18					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	L brown					
		Ag	Yellow	Sample temperature, °F		375		
		Steel	Blue	Sample volume, ml		200		
		Cu	Brown	Air rate, liter/hr		130		
		Mg	Brown	Condensate return		No		
(a) Blend (3:1) of O-65-18 and O-65-21.								

TEST NO. 204-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1129(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.31	—	3.84	0.09	—			
16 hr	17.50	14.3	4.19	0.47	30.3			
24 hr	18.87	23.3	4.43	0.54	42.2			
40 hr	22.75	48.6	5.08	0.71	59.8			
48 hr	25.79	68.5	5.57	0.86	67.6	43	1.53	9.28
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² : Al +0.04 Ti 0.00 Ag +0.02 Steel +0.06 Cu -0.12 Mg +0.08					Sludge in oil: 200-mesh filter None Centrifuge, vol % None			
					Tube deposits: Below oil level None At and above oil level L var			
					Test Conditions			
					Sample temperature, °F 375			
					Sample volume, ml 200			
					Air rate, liter/hr 130			
Metal discoloration, deposits, pitting, or etching: Al L yellow Ti L brown Ag Yellow Steel Blue Cu Green-brown Mg No change					Condensate return No			
(a) Blend (1:9) of O-65-18 and O-65-21.								

TEST NO. 204-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON J-1130(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.30		4.50	0.22				
16 hr	18.70	8.1	4.79	0.57	31.3			
24 hr	19.97	15.4	5.07	0.63	45.0			
40 hr	24.89	43.9	6.12	0.78	69.8			
48 hr	31.06	79.5	7.41	0.96	79.1	47	1.40	10.56
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.06	Sludge in oil:		200-mesh filter	None
			Ti	+0.02			Centrifuge, vol %	None
			Ag	+0.14	Tube deposits:		Below oil level	None
			Steel	+0.02			At and above oil level	L var
			Cu	-0.04				
			Mg	+0.10				
Metal discoloration, deposits, pitting, or etching:			Fes' Conditions					
			Al	1 yellow	Sample temperature, °F		375	
			Ti	1 brown			Sample volume, ml	200
			Ag	Yellow	Air rate, liter/hr		130	
			Steel	Blue			Condensate return	No
			Cu	Green-brown				
Mg	Brown							
(a) Blend (9:1) of O-65-18 and O-65-21.								

TEST NO. 204-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.55	—	4.61	0.21	—	—	—	—
16 hr	18.88	7.6	4.87	0.61	28.8	—	—	—
24 hr	20.11	14.6	5.16	0.63	41.9	—	—	—
40 hr	24.49	39.5	6.15	0.77	66.3	—	—	—
48 hr	29.34	67.2	7.19	0.90	76.1	46	1.48	10.70
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.04	Sludge in oil:		200-mesh filter	None
			Ti	+0.06			Centrifuge, vol %	None
			Ag	+0.04	Tube deposits:		Below oil level	None
			Steel	+0.04			At and above oil level	L var
			Cu	-0.04				
			Mg	+0.12				
Metal discoloration, deposits, pitting, or etching:			Al	L yellow	Test Conditions			
			Ti	L brown	Sample temperature, °F		375	
			Ag	Yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			Cu	Green-brown	Condensate return		No	
			Mg	Brown				

TEST NO. 205-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON K-1004(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.06	--	4.12	0.17	--	--	--	--
16 hr	17.61	9.7	4.39	0.51	28.0	--	--	--
24 hr	18.81	17.1	4.62	0.65	40.0	--	--	--
40 hr	22.69	41.3	5.35	0.83	59.5	--	--	--
48 hr	26.62	65.8	6.05	0.98	64.9	45	1.55	9.95
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	0.00	Tube deposits:		Below oil level	None	
		Steel	-0.02			At and above oil level	L var	
		Cu	-0.12					
		Mg	+0.02					
Metal discoloration, deposits, pitting, or etching:		Al	L tan	Test Conditions				
		Ti	L brown	Sample temperature, °F		375		
		Ag	L tan	Sample volume, ml		200		
		Steel	Blue	Air rate, liter/hr		130		
		Cu	L green	Condensate return		No		
		Mg	Tan					
(a) Blend (1:1) of O-65-19 and O-65-25.								

TEST NO. 205-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON K-1005(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.38	—	3.88	0.12	—			
16 hr	17.07	11.0	4.17	0.47	30.9			
24 hr	18.23	18.5	4.36	0.56	44.0			
40 hr	21.68	41.0	4.99	0.75	65.3			
48 hr	24.53	59.5	5.47	0.91	72.3	43	1.51	9.41
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	+0.02			None		
		Ag	0.00					
		Steel	+0.02	Tube deposits: Below oil level At and above oil level		None		
		Cu	-0.12			L var		
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	L tan	Test Conditions				
		Ti	L brown					
		Ag	L tan	Sample temperature, °F	375			
		Steel	Blue	Sample volume, ml	200			
		Cu	L brown	Air rate, liter/hr	130			
		Mg	L pink	Condensate return	No			
(a) Blend (1:3) of O-65-19 and O-65-25.								

TEST NO. 205-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON K-1006(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.87	—	4.38	0.20	—			
16 hr	18.11	7.4	62	0.56	29.2			
24 hr	19.33	14.6	35	0.66	42.4			
40 hr	23.10	36.9	2.2	0.88	66.4			
48 hr	27.10	60.6	6.39	1.05	75.6	45	1.68	10.27
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	0.00			None		
		Ag	-0.02					
		Steel	0.00	Tube deposits: Below oil level At and above oil level		None		
		Cu	-0.12			L var		
		Mg	+0.02					
Metal discoloration, deposits pitting, or etching:		Al	L tan	Test Conditions				
		Ti	L brown					
		Ag	Tan	Sample temperature, °F		375		
		Steel	Blue	Sample volume, ml		200		
		Cu	L green	Air rate, liter/hr		130		
		Mg	L pink	Condensate return		No		
(a) Blend (3:1) of O-65-19 and O-65-25.								

TEST NO. 205-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON K-1007(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.95	—	3.78	0.09	—			
16 hr	16.78	12.2	4.05	0.45	29.4			
24 hr	18.02	20.5	4.27	0.52	41.5			
40 hr	21.69	45.1	4.88	0.73	59.1			
48 hr	24.50	63.9	5.38	0.91	63.3	43	1.43	9.28
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	-0.02	Tube deposits:		Below oil level	None	
		Steel	0.00			At and above oil level	L var	
		Cu	-0.10					
		Mg	-0.02					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L brown					
		Ag	Tan	Sample temperature, °F	375			
		Steel	Blue	Sample volume, ml	200			
		Cu	Brown	Air rate, liter/hr	130			
		Mg	No change	Condensate return	No			
(a) Blend (1:9) of O-65-19 and O-65-25.								

TEST NO. 205-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON K-1008(a) AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.38	—	4.54	0.23	—			
16 hr	18.76	7.9	4.81	0.58	30.3			
24 hr	20.04	15.3	5.09	0.66	43.8			
40 hr	24.71	42.2	6.09	0.86	68.6			
48 hr	30.09	73.1	7.27	1.07	78.3	47	1.74	10.54
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	0.00					
		Steel	0.00	Tube deposits:		Below oil level	None	
		Cu	-0.04			At and above oil level	L var	
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	L tan	Test Conditions				
		Ti	Brown	Sample temperature, °F		375		
		Ag	L tan	Sample volume, ml		200		
		Steel	Blue	Air rate, liter/hr		130		
		Cu	L green	Condensate return		No		
		Mg	L pink					
(a) Blend (9:1) of O-65-19 and O-65-25.								

TEST NO. 205-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.11	—	3.76	0.07	—			
16 hr	16.99	12.4	4.07	0.48	29.4			
24 hr	18.18	20.3	4.27	0.55	41.0			
40 hr	21.57	42.8	4.86	0.76	58.8			
48 hr	24.11	59.6	5.24	0.88	64.1	40	1.57	9.01
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	+0.02	Tube deposits:		Below oil level	None	
		Steel	0.00			At and above oil level	None	
		Cu	-0.08					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L brown					
		Ag	L tan	Sample temperature, °F	375			
		Steel	Blue	Sample volume, ml	200			
		Cu	Brown	Air rate, liter/hr	130			
		Mg	No change	Condensate return	No			

TEST NO. 207-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-25 AT 375°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.71	—	3.67	0.07	—			
16 hr	16.35	11.2	3.93	0.46	27.0			
24 hr	17.41	18.4	4.13	0.59	38.5			
40 hr	20.68	40.6	4.64	0.76	56.5			
48 hr	23.06	56.8	5.02	0.94	61.6	39	1.54	9.03
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	0.00	Tube deposits:		Below oil level	None	
		Steel	0.00			At and above oil level	None	
		Cu	-0.02					
		Mg	-0.04					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	Brown					
		Ag	Yellow	Sample temperature, °F	375			
		Steel	Blue	Sample volume, ml	200			
		Cu	Orange & brown	Air rate, liter/hr	130			
		Mg	L yellow	Condensate return	No			

TEST NO. 208-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-25 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	14.71	—	3.67	0.07	47	
16 hr	16.81	14.3	4.00	0.56		
24 hr	18.33	24.6	4.26	0.67		
40 hr	23.05	56.7	5.01	1.05		
48 hr	26.32	78.9	5.50	1.33		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	0.00		Tube deposits:	Below oil level	None
	Steel	+0.04			At and above oil level	None
	Cu	-0.18				
	Mg	+0.04				
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions			
	Ti	Yellow-tan	Sample temperature, °F	385		
	Ag	L yellow	Sample volume, ml	200		
	Steel	Blue	Air rate, liter/hr	130		
	Cu	Brown-green	Condensate return	Yes		
	Mg	L yellow				

TEST NO. 208-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 385°F

TEST NO. 208-2. RESULTS OF REFLEX OXIDATION CORROSION TEST ON C-65 AT 385°F.						
	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	13.40	-	3.23	0.08	44	
16 hr	15.33	14.4	3.54	0.25		
24 hr	16.44	22.7	3.71	0.43		
40 hr	19.41	44.9	4.13	0.69		
48 hr	21.72	62.1	4.44	0.74		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	Trace	
	Ag	0.00		Tube deposits:	Below oil level	None
	Steel	+0.04			At and above oil level	None
	Cu	0.00				
	Mg	0.00				
Metal discoloration, deposits, pitting, or etching:	Al	No charge	Test Conditions			
	Ti	Tan	Sample temperature, °F	385		
	Ag	L yellow	Sample volume, ml	200		
	Steel	Brown-blue	Air rate, liter/hr	130		
	Cu	Orange	Condensate return	Yes		
	Mg	No change				

TEST NO. 208-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-25 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.71	—	3.67	0.07	—			
16 hr	17.04	15.8	4.04	0.57	37.3			
24 hr	18.60	26.4	4.29	0.68	51.4			
40 hr	23.28	58.3	5.03	1.05	70.0			
48 hr	26.14	77.7	5.47	1.30	73.2	48	1.68	9.24
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	+0.02			Centrifuge, vol %	None	
		Ag	0.00			Tube deposits: Below oil level None At and above oil level None		
		Steel	0.00					
		Cu	-0.20					
		Mg	+0.02					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	Yellow-tan					
		Ag	L yellow	Sample temperature, °F	385			
		Steel	Blue	Sample volume, ml	200			
		Cu	Brown-green	Air rate, liter/hr	130			
		Mg	L yellow	Condensate return	No			

TEST NO. 208-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample		
							Acidity, mg KOH/g	Vis, cs/100°F	
Initial	13.40	—	3.23	0.08	—				
16 hr	15.45	15.3	3.56	0.25	37.3				
24 hr	16.69	24.6	3.74	0.43	52.4				
40 hr	20.23	51.0	4.26	0.69	74.5				
48 hr	23.02	71.8	4.60	0.74	80.0	47	1.07	10.32	
Metal Specimen Data					Test Cell Data				
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None		
		Ti	0.00			Centrifuge, vol %	Trace		
		Ag	+0.02						
		Steel	+0.02			Tube deposits:	None		
		Cu	-0.02			Below oil level	None		
		Mg	0.00			At and above oil level			
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions					
		Ti	Yellow						
		Ag	L yellow	Sample temperature, °F	385				
		Steel	Brown-blue	Sample volume, ml	200				
		Cu	Orange	Air rate, liter/hr	130				
		Mg	No change	Condensate return	No				

TEST NO. 210-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71	—	4.67	0.24	3
48 hr	17.36	-2.0	4.54	0.84	
96 hr	17.36	-2.0	4.53	1.10	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level At and above oil level	None L var
	Steel	0.00			
	Cu	-0.08			
	Mg	+0.08	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	96+ hr	
	Ti	L brown		100°F vis	
	Ag	L yellow	Test Conditions		
	Steel	Purple	Sample temperature, °F	347	
	Cu	Green-pink		Sample volume, ml	
	Mg	L yellow	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 210-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55	-	4.61	0.21	
48 hr	17.34	-1.2	4.51	0.84	
96 hr	17.27	-1.6	4.50	1.10	2

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	1. var
	Cu	-0.10			
	Mg	+0.10	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	1 yellow	Neut. no.	96+ hr	
	Ti	1 brown		100°F vis	96+ hr
	Ag	1 yellow	Test Conditions		
	Steel	Purple	Sample temperature, °F	347	
	Cu	Pink-brown		Sample volume, ml	200
	Mg	1 yellow	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 210-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	-	4.67	0.25	
48 hr	17.45	-1.5	4.55	0.86	
96 hr	17.38	-1.9	4.52	1.13	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al 0.00 Ti 0.00 Ag +0.02 Steel +0.04 Cu -0.10 Mg +0.06 Metal discoloration, deposits, pitting, or etching: Al L yellow Ti L brown Ag L yellow Steel Purple Cu Pink-brown Mg L yellow			Sludge in oil:	200-mesh filter Centrifuge, vol %	None None
			Tube deposits:	Below oil level At and above oil level	None L var
			Breakpoint Data		
			Neut. no.	96+ hr	
			100°F vis	96+ hr	
			Test Conditions		
			Sample temperature, °F	347	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 210-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11	-	3.76	0.07	
48 hr	15.43	+2.1	3.81	0.70	
96 hr	15.56	+3.0	3.80	0.91	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al 0.00 Ti 0.00 Ag +0.02 Steel +0.02 Cu -0.16 Mg +0.04 Metal discoloration, deposits, pitting, or etching: Al L yellow Ti L brown Ag L yellow Steel Purple Cu Brown-purple Mg L yellow			Sludge in oil:	200-mesh filter Centrifuge, vol %	None Trace
			Tube deposits:	Below oil level At and above oil level	None L var
			Breakpoint Data		
			Neut. no.	96+ hr	
			100°F vis	96+ hr	
			Test Conditions		
			Sample temperature, °F	347	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 210-S. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.71		3.67	0.07	
48 hr	14.94	+1.6	3.68	0.71	
96 hr	14.95	+1.6	3.67	1.01	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	1 var
	Cu	-0.16			
	Mg	+0.02	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	96+ hr	
	Ti	L brown		100°F vis	96+ hr
	Ag	L yellow	Test Conditions		
	Steel	Purple	Sample temperature, °F		
	Cu	Purple-brown			
	Mg	L yellow			
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 211-L. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71		4.67	0.24	
96 hr	17.52	-1.1	4.59	1.10	
144 hr	17.48	-1.3	4.56	1.29	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	1 var
	Steel	0.00		At and above oil level	None
	Cu	-0.16			
	Mg	+0.04	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	144+ hr	
	Ti	Fan blue		100°F vis	144+ hr
	Ag	L yellow	Test Conditions		
	Steel	blue	Sample temperature, °F		
	Cu	Green brown			
	Mg	L yellow			
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 211-2, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 347°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55		4.61	0.21	
96 hr	17.24	-1.8	4.47	1.13	
144 hr	17.18	-2.1	4.47	1.25	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-0.18			
	Mg	+0.04	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	144+ hr	
	Ti	L brown	100°F vis	144+ hr	
	Ag	L yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Brown-green	Sample volume, ml	200	
	Mg	L yellow	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 211-3, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72		4.67	0.25	
96 hr	17.43	-1.6	4.53	1.12	
144 hr	17.36	-2.0	4.51	1.31	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-0.14			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	144+ hr	
	Ti	Brown-blue	100°F vis	144+ hr	
	Ag	L yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Brown-green	Sample volume, ml	200	
	Mg	Green-yellow	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 211-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11		3.76	0.07	
96 hr	15.45	2.3	3.80	0.90	
144 hr	15.45	2.3	3.79	1.01	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L. var
	Cu	-0.18			
	Mg	-0.12	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L. yellow	Neut. no.	144+ hr	
	Ti	Brown	100°F vis	144+ hr	
	Ag	L. yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Brown-green	Sample volume, ml	200	
	Mg	No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 211-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-25 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.71		3.67	0.07	
96 hr	15.13	2.9	3.71	0.84	
144 hr	15.17	3.1	3.70	0.90	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L. var
	Cu	-0.18			
	Mg	-0.14	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L. yellow	Neut. no.	144+ hr	
	Ti	Brown	100°F vis	144+ hr	
	Ag	L. yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Brown pink	Sample volume, ml	200	
	Mg	No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 212-1 RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71		4.67	0.24	
144 hr	17.49	-1.2	4.56	1.30	
192 hr	17.31	-2.3	4.51	1.56	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200 mesh filter	None
	Ti	+0.02		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	M var
	Cu	-0.12			
	Mg	+0.06	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		192+ hr
	Ti	L blue	100°F vis		192+ hr
	Ag	Tan	Test Conditions		
	Steel	Blue-green	Sample temperature, °F		347
	Cu	L green	Sample volume, ml		200
	Mg	Tan	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 212-2 RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71		4.67	0.24	
144 hr	17.38	-1.9	4.54	1.37	
192 hr	17.25	-2.6	4.49	1.54	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.06		At and above oil level	M var
	Cu	-0.12			
	Mg	+0.10	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		192+ hr
	Ti	Tan	100°F vis		192+ hr
	Ag	Tan	Test Conditions		
	Steel	Blue-green	Sample temperature, °F		347
	Cu	L green	Sample volume, ml		200
	Mg	Tan	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 212-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-18 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55		4.61	0.21	
144 hr	17.40	-0.9	4.53	1.35	
192 hr	17.27	-1.6	4.50	1.50	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	M var
	Cu	-0.20			
	Mg	+0.10			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L brown	Neut. no.	192+ hr	
	Ag	Tan	100°F vis	192+ hr	
	Steel	Blue	Test Conditions		
	Cu	Rose-green	Sample temperature, °F	347	
	Mg	Tan	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 212-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	—	4.67	0.25	4
144 hr	17.33	-2.2	4.51	1.34	
192 hr	17.17	-3.1	4.47	1.60	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.04	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	M var
	Cu	-0.14			
	Mg	+0.06			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L brown	Neut. no.	192+ hr	
	Ag	Tan	100°F vis	192+ hr	
	Steel	Blue	Test Conditions		
	Cu	Rose-green	Sample temperature, °F	347	
	Mg	Tan	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 212-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11		3.76	0.07	
144 hr	15.55	+2.9	3.83	1.10	
192 hr	15.69	+2.7	3.82	1.17	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L var
	Cu	-0.14			
	Mg	+0.02	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	192+ hr	
	Ti	Brown		100°F vis	192+ hr
	Ag	L yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Rose-brown		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 212-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-25 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.71		3.67	0.07	
144 hr	14.92	+1.4	3.66	1.22	
192 hr	14.91	+1.4	3.66	1.26	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L var
	Cu	-0.16			
	Mg	+0.04	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	192+ hr	
	Ti	Brown		100°F vis	192+ hr
	Ag	L yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Rose-brown		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 213-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-33 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	18.12	-	4.09	0.14	
16 hr	18.71	3.3	4.15	0.19	
24 hr	18.99	4.8	4.18	0.32	
40 hr	19.46	7.4	4.25	0.37	
48 hr	19.93	10.0	4.32	0.37	24
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al 0.00	Sludge in oil: 200-mesh filter		None
		Ti +0.02	Centrifuge, vol %		None
		Ag 0.00	Tube deposits: Below oil level		None
		Steel 0.00	At and above oil level		None
		Cu -0.16			
		Mg 0.00			
Metal discoloration, deposits, pitting, or etching:		Al No change	Test Conditions		
		Ti Tan	Sample temperature, °F		385
		Ag No change	Sample volume, ml		200
		Steel Blue	Air rate, liter/hr		130
		Cu L brown	Condensate return		Yes
		Mg No change			

TEST NO. 213-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-37 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.37	-	3.43	0.34	
16 hr	60.42	-	8.30	11.37	
24 hr	149.9	-	15.02	18.98	
40 hr	2722	19,000	136.8	24.3	
48 hr	Gelled	-	-	-	49
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al 0.00	Sludge in oil: 200-mesh filter		None
		Ti +0.02	Centrifuge, vol %		None
		Ag 0.00	Tube deposits: Below oil level		L var
		Steel 0.00	At and above oil level		L var
		Cu -5.70			
		Mg +0.02			
Metal discoloration, deposits, pitting, or etching:		Al No change	Test Conditions		
		Ti Tan	Sample temperature, °F		385
		Ag No change	Sample volume, ml		200
		Steel Blue-green	Air rate, liter/hr		130
		Cu H etching	Condensate return		Yes
		Mg No change			

TEST NO. 213-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-1 AT 385°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.92		3.19	0.27	
16 hr	18.00	39.3	3.94	0.44	
24 hr	20.23	56.6	4.27	0.71	
40 hr	23.99	85.7	4.75	0.85	
48 hr	25.54	97.7	4.97	0.86	45
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	-0.10			
	Mg	0.04			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		385
	Ti	Tan	Sample volume, ml		200
	Ag	No change	Air rate, liter/hr		130
	Steel	Blue-green	Condensate return		Yes
	Cu	L. brown			
	Mg	No change			

TEST NO. 213-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-3 AT 385°F

	Vis., cs/100°F	100°F Vis. Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis., cs/100°F
Initial	18.12		4.09	0.14				
16 hr	18.68	3.1	4.14	0.18				
24 hr	19.01	4.9	4.20	0.32	18.2			
40 hr	19.45	7.3	4.25	0.37	28.1			
48 hr	19.91	9.9	4.35	0.38	33.2	24	2.52	14.94
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ²	Al	0.00	Sludge in oil:	200-mesh filter	None			
	Ti	0.00		Centrifuge, vol %	None			
	Ag	0.00	Tube deposits:	Below oil level	None			
	Steel	0.00		At and above oil level	None			
	Cu	0.12						
	Mg	0.02						
Metal discoloration, deposits, pitting, or etching	Al	No change	Test Conditions					
	Ti	Tan						
	Ag	No change	Sample temperature, °F	385				
	Steel	Blue	Sample volume, ml	200				
	Cu	L. brown	Air rate, liter/hr	130				
	Mg	No change	Condensate return	No				

TEST NO. 213-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-37 AT 385°C.

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.37		3.43	0.34	...			
16 hr	63.62	343	8.57	12.23	42.6			
24 hr	159.6	1 011	15.78	16.83	52.3			
40 hr	3831	26., 60	148.8	24.3	58.5			
48 hr	Gelled	58.9	51	72.9	7.89
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol % Tube deposits: Below oil level L var At and above oil level L var				
		Ti	0.00					
		Ag	0.00					
		Steel	0.00					
		Cu	-5.40					
		Mg	0.00	Test Conditions				
Metal discoloration, deposits, pitting, or etching:		Al	No change					
		Ti	Tan	Sample temperature, °F		385		
		Ag	No change	Sample volume, ml		200		
		Steel	Blue-green	Air rate, liter/hr		130		
		Cu	H etching	Condensate return		No		
		Mg	No change					

TEST NO. 213-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-1 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No. mg KOH/g	Overhead Wt. g	Oil Los., wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	12.92	—	3.19	0.27				
16 hr	18.02	39.5	3.96	0.42	48.4			
24 hr	20.76	56.8	4.26	0.70	59.5			
40 hr	23.98	85.6	4.76	0.84	67.3			
48 hr	25.57	97.9	4.97	0.84	68.4	44	1.37	7.58
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:		200-mesh filter	None		
	Ti	0.00			Centrifuge, vol %	None		
	Ag	+0.02	Tube deposits:		Below oil level	None		
	Steel	0.00			At and above oil level	None		
	Cu	0.06						
	Mg	0.00						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions					
	Ti	Tan						
	Ag	No change	Sample temperature, °F	385				
	Steel	Blue-green	Sample volume, ml	200				
	Cu	L brown	Air rate, liter/hr	130				
	Mg	No change	Condensate return	No				

TEST NO. 214-1, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.61		4.11	0.27	
16 hr	17.60	12.7	4.50	0.73	
24 hr	19.21	23.1	4.84	0.84	
40 hr	30.06	92.6	6.97	1.31	
48 hr	175.6	1025	28.70	3.29	61
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	(a)
	Ag	0.00	Tube deposits:	Below oil level	1 var
	Steel	+0.02		At and above oil level	1 var
	Cu	0.06			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	L brown	Sample temperature, °F	385	
	Ag	L yellow		Sample volume, ml	200
	Steel	Blue		Air rate, liter/hr	130
	Cu	Brown		Condensate return	Yes
	Mg	L yellow			
(a) Insufficient sample.					

TEST NO. 214-2, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-2 AT 385°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.84		3.33	0.05	
16 hr	15.70	13.4	3.63	0.42	
24 hr	16.79	21.3	3.78	0.62	
40 hr	20.32	46.8	4.28	0.84	
48 hr	23.92	72.8	4.76	0.94	44
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	0.02			
	Mg	0.02			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	Tan	Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return Yes		
	Ag	L yellow			
	Steel	Blue			
	Cu	Yellow-orange			
	Mg	No change			

TEST NO. 214-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.32		4.31	0.14	
16 hr	18.27	11.9	4.67	0.67	
24 hr	19.83	21.5	5.03	0.78	
40 hr	28.62	75.4	6.78	1.13	
48 hr	52.69	223	11.18	1.76	60
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.06	Sludge in oil:	200-mesh filter	None
	Ti	-0.04		Centrifuge, vol %	None
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L var
	Cu	-0.06			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	L brown			
	Ag	L yellow			
	Steel	Blue			
	Cu	Brown			
	Mg	L yellow			
			Sample temperature, °F		
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 214-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-39 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.61		4.11	0.27				
16 hr	17.49	12.0	4.48	0.73	40.8			
24 hr	18.97	21.5	4.80	0.84	59.8			
40 hr	27.18	74.1	6.39	1.28	93.3			
48 hr	52.73	238	11.06	1.99	104.5	62	1.64	10.58
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None (a)			
	Ti	0.00		Centrifuge, vol %				
	Ag	0.00		Tube deposits:	Below oil level	L var		
	Steel	0.00			At and above oil level			
	Cu	0.06						
	Mg	+0.02						
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions					
	Ti	L brown						
	Ag	L yellow	Sample temperature, °F	385				
	Steel	Blue	Sample volume, ml	200				
	Cu	Brown	Air rate, liter/hr	130				
	Mg	L yellow	Condensate return	No				
(a) Insufficient sample.								

TEST NO. 214-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.84	—	3.33	0.05	—	—	—	—
16 hr	15.84	14.5	3.65	0.44	32.4	—	—	—
24 hr	17.05	23.2	3.83	0.65	45.8	—	—	—
40 hr	21.37	54.4	4.42	0.88	67.9	—	—	—
48 hr	26.67	92.7	5.10	0.96	74.4	47	1.59	10.51
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	0.00			None		
		Ag	+0.02	Tube deposits: Below oil level At and above oil level		None		
		Steel	0.00			None		
		Cu	-0.04					
		Mg	-0.04					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Tan					
		Ag	L yellow	Sample temperature, °F		385		
		Steel	Blue	Sample volume, ml		200		
		Cu	Yellow-orange	Air rate, liter/hr		130		
		Mg	No change	Condensate return		No		

TEST NO. 214-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.32	—	4.31	0.14	—	—	—	—
16 hr	18.17	11.3	4.66	0.68	36.7	—	—	—
24 hr	19.72	20.8	5.02	0.79	53.9	—	—	—
40 hr	28.32	73.5	6.72	1.12	85.1	—	—	—
48 hr	50.47	209	10.85	1.68	96.2	58	1.46	10.53
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.08	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	+0.02			None		
		Ag	+0.02	Tube deposits: Below oil level At and above oil level		None		
		Steel	0.00			L var		
		Cu	-0.02					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	L brown					
		Ag	L yellow	Sample temperature, °F		385		
		Steel	Blue	Sample volume, ml		200		
		Cu	Brown	Air rate, liter/hr		130		
		Mg	L yellow	Condensate return		No		

TEST NO. 222-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-20 AT 385°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.75		4.68	0.26	
16 hr	19.35	9.0	5.02	0.77	
24 hr	21.05	18.6	5.37	0.92	
40 hr	27.35	54.1	6.77	1.27	
48 hr	39.43	122	9.22	1.80	56
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %	None (a)	
	Ti	0.00			
	Ag	+0.02			
	Steel	0.00			
	Cu	-0.06			
	Mg	+0.10			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	Purple-brown	Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return Yes		
	Ag	L pink			
	Steel	Blue-green			
	Cu	Orange-green			
	Mg	L yellow			
(a) Insufficient sample.					

TEST NO. 222-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-65-20 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.75		4.68	0.26				
16 hr	19.43	9.5	5.00	0.78	38.4			
24 hr	21.16	19.2	5.39	0.92	55.7			
40 hr	28.25	59.2	6.93	1.27	84.8			
48 hr	43.37	144	10.07	1.77	94.9	57	1.75	10.90
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None (a)	
			Ti	+0.02				
			Ag	0.00				
			Steel	+0.02				
			Cu	-0.06				
			Mg	+0.10	Tube deposits: Below oil level At and above oil level		None L var	
Metal discoloration, deposits, pitting, or etching:			No change Purple-brown L pink Blue-green Orange-green L yellow					
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
					Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No			
(a) Insufficient sample								

TEST NO. 223-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-14 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	17.71	—	4.63	0.24	5	
16 hr	17.11	-3.4	4.50	1.17		
24 hr	16.97	-4.2	4.42	1.46		
40 hr	15.90	-10.2	4.07	4.20		
48 hr	16.82	-5.0	4.07	13.07		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	Trace	
	Ti	0.00		Centrifuge, vol %	Trace	
	Ag	0.00		Tube deposits:	Below oil level	None
	Steel	+0.02			At and above oil level	H var
	Cu	-0.43				
	Mg	-0.83				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data			
	Ti	Blue	Neut. no.	31 hr		
	Ag	No change	100°F vis	45 hr		
	Steel	Blue-green	Test Conditions			
	Cu	Orange-brown	Sample temperature, °F	385		
	Mg	L pitting	Sample volume, ml	200		
			Air rate, liter/hr	10		
			Condensate return	Yes		

TEST NO. 223-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	17.55	-	4.61	0.21		
16 hr	17.06	-2.8	4.48	1.19		
24 hr	16.94	-3.5	4.40	1.42		
40 hr	16.49	-6.0	4.27	2.03		
48 hr	15.99	-8.9	3.97	8.84	2	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %	None		
	Ti	0.00		Trace		
	Ag	0.00				
	Steel	+0.02		Tube deposits: Below oil level At and above oil level	None	
	Cu	-0.34			H var	
	Mg	-0.18				
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data			
	Ti	Purple	Neut. no.	40 hr		
	Ag	L yellow	100°F vis	48+ hr		
	Steel	Blue	Test Conditions			
	Cu	Orange-brown	Sample temperature, °F	385		
	Mg	L pitting	Sample volume, ml	200		
		Air rate, liter/hr	10			
		Condensate return	Yes			

TEST NO. 223-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72		4.67	0.25	
16 hr	17.04	-3.8	4.44	1.17	
24 hr	16.95	-4.3	4.37	1.40	
40 hr	16.54	-6.7	4.28	2.12	
48 hr	15.82	-10.7	3.98	8.02	3

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	M var
	Cu	-0.20			
	Mg	+6.04			
Metal discoloration, deposits, putting, or etching:	Al	L. yellow	Breakpoint Data		
	Ti	Purple	Neut. no.	39 hr	
	Ag	L. yellow		100°F vis	48+ hr
	Steel	Blue	Test Conditions		
	Cu	Orange-brown	Sample temperature, °F	385	
	Mg	Yellow	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 223-4. RESULTS OF REF-LUX OXIDATION-CORROSION TEST ON O-65-21 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11		3.76	0.07	
16 hr	15.26	+1.0	3.75	1.02	
24 hr	15.26	+1.0	3.74	1.21	
40 hr	15.08	-0.2	3.70	1.49	
48 hr	15.14	+0.2	3.75	1.63	3

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	1 var
	Cu	0.14			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching			Breakpoint Data		
			Neut. no.	48+ hr	
			100°F vis	48+ hr	
			Test Conditions		
			Sample temperature, °F	385	
	Sample volume, ml	200			
	Air rate, liter/hr	10			
	Condensate return	Yes			

TEST NO. 223-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-25 AT 385°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.71		3.67	0.07	
16 hr	14.64	-0.5	3.65	0.92	
24 hr	14.81	+0.7	3.65	1.16	
40 hr	14.75	+0.3	3.64	1.38	
48 hr	14.81	+0.7	3.61	1.62	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L var
	Cu	-0.16			
	Mg	+0.02			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	Brown	Neut. no.	48+ hr	
	Ag	L yellow	100°F vis	48+ hr	
	Steel	Blue	Test Conditions		
	Cu	Purple-green	Sample temperature, °F	385	
	Mg	L yellow	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 223-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 385°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.40		3.23	0.08	
16 hr	14.14	5.5	3.35	0.42	
24 hr	14.29	6.6	3.36	0.59	
40 hr	14.51	8.3	3.42	0.83	
48 hr	14.64	9.3	3.44	0.93	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	None
	Cu	+0.14			
	Mg	+0.02			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L tan	Neut. no.	48+ hr	
	Ag	No change	100°F vis	48+ hr	
	Steel	Blue	Test Conditions		
	Cu	Orange	Sample temperature, °F	385	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 224-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71	-	4.67	0.24	
16 hr	17.46	-1.4	4.55	1.03	
24 hr	17.40	-1.8	4.53	1.20	
40 hr	17.24	-2.7	4.49	1.47	
48 hr	17.13	-3.3	4.46	1.63	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al - Ti - Ag - Steel - Cu -0.04 Mg +0.16 Metal discoloration, deposits, pitting, or etching: Al - Ti - Ag - Steel - Cu Yellow Mg Yellow			Sludge in oil:	200-mesh filter Centrifuge, vol %	None Trace
			Tube deposits:	Below oil level At and above oil level	None M var
			Breakpoint Data		
			Neut. no.	48+ hr	
			100°F vis	48+ hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 224-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71		4.67	0.24	
16 hr	19.51	10.2	5.03	0.73	
24 hr	21.17	19.5	5.42	0.74	
40 hr	32.50	83.5	6.07	23.2	
48 hr	879.6	4866	59.26	22.3	58
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al - Ti - Ag - Steel - Cu 11.3 Mg -9.5 Metal discoloration, deposits, pitting, or etching: Al - Ti - Ag - Steel - Cu H pitting Mg H pitting			Sludge in oil:	200-mesh filter Centrifuge, vol %	None (a)
			Tube deposits:	Below oil level At and above oil level	None L var
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	130	
			Condensate return	Yes	

TEST NO. 224-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55	-	4.61	0.21	
16 hr	17.30	-1.4	4.52	1.00	
24 hr	17.24	-1.8	4.51	1.19	
40 hr	17.06	-2.8	4.44	1.53	
48 hr	15.92	-9.3	4.08	3.83	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			None		
			M var		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no. 42 hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 224-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-65-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	17.55		4.61	0.21		
16 hr	19.50	11.1	5.03	0.71		
24 hr	21.26	21.1	5.44	0.73		
40 hr	28.79	64.0	7.12	1.03		
48 hr	42.61	143	10.12	1.13	54	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al		Sludge in oil:	200-mesh filter	None	
	Ti			Centrifuge, vol %	(a)	
	Ag			Tube deposits:	Below oil level	None
	Steel				At and above oil level	L var
	Cu	+0.22				
	Mg	+0.22				
Metal discoloration, deposits, pitting, or etching:	Al		Test Conditions			
	Ti		Sample temperature, °F	385		
	Ag		Sample volume, ml	200		
	Steel		Air rate, liter/hr	130		
	Cu	Yellow	Condensate return	Yes		
	Mg	Yellow				
(a) Insufficient sample.						

TEST NO. 224-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-2 AT 385°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.84		3.33	0.05	
16 hr	14.50	4.8	3.44	0.53	
24 hr	14.68	6.1	3.49	0.78	
40 hr	14.91	7.7	3.51	1.03	
48 hr	15.07	8.9	3.53	1.14	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	None
	Cu	0.00			
	Mg	0.30			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L tan	Neut. no.	48+ hr	
	Ag	L yellow	100°F vis	48+ hr	
	Steel	Blue-green	Test Conditions		
	Cu	Yellow	Sample temperature, °F	385	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 224-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-11 AT 385°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.41		4.30	0.16	
16 hr	16.03	-2.2	4.18	0.21	
24 hr	15.96	-2.7	4.17	0.27	
40 hr	15.64	-4.7	3.82	7.29	
48 hr	13.59	+13.3	4.21	13.57	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	0.00			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	Brown	Neut. no.	31 hr	
	Ag	L yellow	100°F vis	41 hr	
	Steel	Blue-green	Test Conditions		
	Cu	Orange	Sample temperature, °F	385	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 225-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.41		4.30	0.16	
16 hr	16.38	-0.2	4.28	0.09	
24 hr	16.49	+0.5	4.34	0.12	
40 hr	40.00	+144	6.90	29.9	
48 hr	120.6	+635	14.25	45.2	44
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level At and above oil level		
			None		
			L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			130		
			Condensate return		
			Yes		

TEST NO. 225-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.41		4.30	0.16				
16 hr	16.41	0.0	4.28	0.10	15.4			
24 hr	16.59	1.1	4.33	0.12	23.0			
40 hr	47.33	188	7.67	33.9	53.6			
48 hr	144.4	780	15.79	47.9	63.5	45	29.2	8.97
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :					Sludge in oil: 200-mesh filter Centrifuge, vol %			
					None			
					None			
					Tube deposits: Below oil level At and above oil level			
					None			
					L var			
Metal discoloration, deposits, pitting, or etching:					Test Conditions			
					Sample temperature, °F			
					385			
					Sample volume, ml			
					200			
					Air rate, liter/hr			
					130			
					Condensate return			
					No			

TEST NO. 226-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.50		5.05	0.09	
16 hr	29.82	8.4	5.31	0.21	
24 hr	30.41	10.6	5.41	0.28	
40 hr	31.10	13.1	5.48	0.37	
48 hr	31.54	14.7	5.54	0.41	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	None
	Cu	0.00			
	Mg	+0.10	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		48+ hr
	Ti	L tan	100°F vis		48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F		385
	Cu	Orange-rose	Sample volume, ml		200
	Mg	L pitting	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 226-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-12 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.76		3.52	0.37	
16 hr	15.03	9.2	3.73	1.25	
24 hr	15.14	10.0	3.75	1.44	
40 hr	14.90	8.3	3.71	1.85	
48 hr	14.73	7.0	3.69	2.10	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.10	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.20		Centrifuge, vol %	0.2
	Ag	+0.12	Tube deposits:	Below oil level	H var
	Steel	+0.14		At and above oil level	H var
	Cu	+0.02			
	Mg	+0.18	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	Dark brown	Neut. no.		48+ hr
	Ti	Brown	100°F vis		48+ hr
	Ag	Dark brown	Test Conditions		
	Steel	Dark brown-blue	Sample temperature, °F		385
	Cu	Dark brown-orange	Sample volume, ml		200
	Mg	Dark brown	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 226-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-18 AT 385°F

	Vis cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.76		4.29	0.12	
16 hr	17.04	+1.6	4.29	1.39	
24 hr	17.02	+1.6	4.27	1.71	
40 hr	16.73	-1.8	4.19	2.38	
48 hr	16.41	-2.1	4.05	5.13	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	H var
	Cu	+0.02			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	L blue	Breakpoint Data		
	Ti	L blue	Neut. no	40 hr	
	Ag	No change	100°F vis	48+ hr	
	Steel	L green-blue	Test Conditions		
	Cu	Orange	Sample temperature, °F	385	
	Mg	L yellow	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 226-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-40 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.69		3.30	0.11	
16 hr	14.47	5.7	3.42	0.34	
24 hr	14.62	6.8	3.46	0.50	
40 hr	14.85	8.5	3.49	0.73	
48 hr	14.97	9.3	3.51	0.93	3

Metal Specimen Data				Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	0.00		Tube deposits	Below oil level	None
	Steel	+0.04			At and above oil level	None
	Cu	+0.02				
	Mg	+0.02				
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data			
Al	No change	Neut. n	48+ hr			
Ti	1 tan	100°F vis	48+ hr			
Ag	1 yellow	Test Conditions				
Steel	Brown-blue	Sample temperature, °F	385			
Cu	Orange	Sample volume, ml	200			
Mg	No change	Air rate, liter/hr	10			
		Condensate return	Yes			

TEST NO. 226-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-9 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.89	—	3.34	0.06	
16 hr	14.60	5.1	3.45	0.56	
24 hr	14.77	6.3	3.49	0.72	
40 hr	15.02	8.1	3.52	1.01	
48 hr	15.15	9.1	3.54	1.14	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % None		
			Tube deposits: Below oil level None At and above oil level None		
			Breakpoint Data		
			Neut. no. 48+ hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 226-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-26 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.75	—	3.10	0.35	
16 hr	13.49	5.8	3.22	0.40	
24 hr	13.74	7.8	3.27	0.46	
40 hr	14.04	10.1	3.31	0.47	
48 hr	14.15	11.0	3.35	0.52	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % 0.2		
			Tube deposits: Below oil level None At and above oil level None		
			Breakpoint Data		
			Neut. no. 48+ hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 227-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-23 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.62	—	3.15	0.20	
16 hr	13.28	5.2	3.26	0.57	
24 hr	13.48	6.8	3.31	0.70	
40 hr	13.71	8.6	3.35	1.08	
48 hr	13.74	8.9	3.35	1.18	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % None		
			Tube deposits: Below oil level None At and above oil level None		
			Breakpoint Data		
			Neut. no. 48+ hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 227-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-37 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.37	—	3.43	0.34	
16 hr	16.57	15.3	3.73	3.09	
24 hr	18.67	29.9	4.02	5.64	
40 hr	23.33	62.4	4.72	9.75	
48 hr	26.38	83.6	5.26	10.20	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % None		
			Tube deposits: Below oil level None At and above oil level None		
			Breakpoint Data		
			Neut. no. 6 hr 100°F vis 8 hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 227-3. RESULTS OF REFLEX OXIDATION-CORROSION TEST ON O-62-16 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.84		4.45	0.22	
16 hr	16.60	-1.4	4.32	1.26	
24 hr	16.29	-3.3	4.29	1.40	
40 hr	16.08	-4.5	4.15	2.27	
48 hr	15.36	-8.8	3.91	6.42	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	Trace
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	M carbon
	Cu	0.00			
	Mg	+0.02	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L blue	Neut. no.	48+ hr	
	Ti	Purple		100°F vis	48+ hr
	Ag	L brown	Test Conditions		
	Steel	Blue-green	Sample temperature, °F	385	
	Cu	Brown-purple	Sample volume, ml	200	
	Mg	Yellow-green	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 227-4. RESULTS OF REFLEX OXIDATION-CORROSION TEST ON O-65-35 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.08		3.21	0.19	
16 hr	13.89	6.1	3.34	0.53	
24 hr	14.13	7.9	3.38	0.85	
40 hr	14.40	10.0	3.40	1.21	
48 hr	14.48	10.6	3.43	1.41	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	+0.06			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	48+ hr	
	Ti	L tan		100°F vis	48+ hr
	Ag	No change	Test Conditions		
	Steel	Blue-brown	Sample temperature, °F	385	
	Cu	Orange green	Sample volume, ml	200	
	Mg	No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 227-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-61-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.67		4.11	0.39	
16 hr	15.74	+0.4	4.11	1.45	
24 hr	15.69	+0.1	4.10	1.63	
40 hr	15.44	-1.5	4.00	2.33	
48 hr	15.09	-3.7	3.80	8.39	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			0.2		
			Tube deposits: Below oil level At and above oil level		
			L var M var		
			Breakpoint Data		
			Neut. no. 39 hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 227-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-63-16 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.47		4.34	0.29	
16 hr	16.29	-1.1	4.26	0.89	
24 hr	16.31	-1.0	4.24	1.20	
40 hr	16.02	-2.7	4.18	1.58	
48 hr	15.81	-4.0	4.12	1.99	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			L var M var		
			Breakpoint Data		
			Neut. no. 48+ hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 230-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-8 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.12	-	4.20	0.18	
16 hr	16.18	+0.4	4.21	0.79	
24 hr	16.04	-0.5	4.17	1.03	
40 hr	15.70	-2.6	3.95	5.90	
48 hr	17.16	+6.5	4.14	13.91	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level At and above oil level		
			Breakpoint Data		
			Neut. no. 28 hr 100°F vis 44 hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 230-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.13	-	3.17	0.19	
16 hr	13.00	7.2	3.34	1.05	
24 hr	13.20	8.8	3.36	1.31	
40 hr	12.98	7.0	3.33	1.88	
48 hr	12.85	5.9	3.30	2.13	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level At and above oil level		
			Breakpoint Data		
			Neut. no. 48+ hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 230-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.51	—	3.84	0.02	
16 hr	15.76	+1.6	3.84	0.76	
24 hr	15.72	+1.4	3.84	1.00	
40 hr	15.57	+0.4	3.85	1.37	
48 hr	15.50	-0.1	3.77	1.54	.2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter		None
	Ti	0.00	Centrifuge, vol %		None
	Ag	+0.02	Tube deposits: Below oil level		L var
	Steel	0.00	At and above oil level		M var
	Cu	-0.14	Breakpoint Data		
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	48+ hr	
	Ti	Brown-purple	100°F vis	48+ hr	
	Ag	L yellow	Test Conditions		
	Steel	Blue			
	Cu	Purple-brown			
	Mg	No change			
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 230-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.01	—	3.93	0.11	
16 hr	15.28	1.8	3.96	1.53	
24 hr	15.23	1.5	3.94	1.62	
40 hr	15.13	0.8	3.92	1.77	
48 hr	15.09	0.5	3.82	1.91	.3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter		None
	Ti	0.00	Centrifuge, vol %		Trace
	Ag	0.00	Tube deposits: Below oil level		L var
	Steel	0.00	At and above oil level		M var
	Cu	-0.10	Breakpoint Data		
	Mg	-0.77			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	48+ hr	
	Ti	L tan	100°F vis	48+ hr	
	Ag	Yellow	Test Conditions		
	Steel	Purple-blue			
	Cu	Brown-green			
	Mg	H pitting			
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 230-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.79	-	4.70	0.24	
16 hr	17.40	-2.2	4.53	1.26	
24 hr	17.26	-3.0	4.49	1.51	
40 hr	16.78	-5.7	4.37	2.19	
48 hr	15.72	-11.6	4.02	5.30	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	+0.02	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	M var
	Cu	-0.22			
Metal discoloration, deposits, pitting, or etching:	Mg	0.00	Breakpoint Data		
	Al	L yellow	Neut. no.	40 hr	
	Ti	Purple-brown		100°F vis	48+ hr
	Ag	L yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	L etching		Sample volume, ml	200
	Mg	L yellow		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 230-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-7 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.42	-	4.19	0.01	
16 hr	17.60	+1.0	4.19	0.68	
24 hr	17.56	+0.8	4.18	0.85	
40 hr	17.38	-0.2	4.14	1.12	
48 hr	17.28	-0.8	4.12	1.26	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	0.00			
Metal discoloration, deposits, pitting, or etching:	Mg	+0.18	Breakpoint Data		
	Al	L yellow	Neut. no.	48+ hr	
	Ti	Yellow-brown		100°F vis	48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	Purple-brown		Sample volume, ml	200
	Mg	Gray		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 232-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-7 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.42	—	4.19	0.01	
16 hr	17.59	+1.0	4.20	0.61	
24 hr	17.59	+1.0	4.19	0.74	
40 hr	17.44	+0.1	4.14	0.98	
48 hr	17.38	-0.2	4.13	1.13	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L carbon
	Cu	-0.16			
	Mg	+0.10	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	48+ hr	
	Ti	L brown		100°F vis	48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	Green-brown		Sample volume, ml	200
	Mg	L gray		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 232-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-13 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.00	—	4.24	0.25	
16 hr	15.74	-1.6	4.13	1.28	
24 hr	15.62	-2.4	4.12	1.46	
40 hr	15.34	-4.1	4.03	2.05	
48 hr	15.12	-5.5	3.95	2.86	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	H carbon
	Cu	-0.22			
	Mg	+0.02	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L blue	Neut. no.	46 hr	
	Ti	Purple-tan		100°F vis	48+ hr
	Ag	L yellow	Test Conditions		
	Steel	Blue-green	Sample temperature, °F	385	
	Cu	L pitting		Sample volume, ml	200
	Mg	Yellow-brown		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 232-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-63-1 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.48	-	4.64	0.23	2
16 hr	17.24	-1.4	4.50	0.84	
24 hr	17.17	-1.8	4.49	1.04	
40 hr	16.72	-4.3	4.37	1.63	
48 hr	15.76	-9.8	4.09	3.78	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	H carbon
	Cu	-0.08			
	Mg	+0.10			
Metal discoloration, deposits, pitting, or etching:	Al	L blue	Breakpoint Data		
	Ti	Purple-tan	Neut. no.	40 hr	
	Ag	L yellow	100°F vis	48+ hr	
	Steel	Blue-green	Test Conditions		
	Cu	Brown-orange	Sample temperature, °F	385	
Mg	Yellow-brown	Sample volume, ml	200		
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 232-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-63-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.26	-	4.31	0.22	3
16 hr	16.11	-0.9	4.25	0.92	
24 hr	16.07	-1.2	4.22	1.10	
40 hr	15.70	-3.4	4.12	1.60	
48 hr	15.06	-7.4	3.91	3.90	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	H carbon
	Cu	-0.06			
	Mg	-0.14			
Metal discoloration, deposits, pitting, or etching:	Al	L blue	Breakpoint Data		
	Ti	Purple-tan	Neut. no.	43 hr	
	Ag	L yellow	100°F vis	48+ hr	
	Steel	Blue-green	Test Conditions		
	Cu	Brown-orange	Sample temperature, °F	385	
	Mg	Yellow-brown	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 232-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-63-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.24	-	4.09	0.24	
16 hr	15.28	+0.3	3.99	1.24	
24 hr	15.25	+0.1	3.97	1.40	
40 hr	14.95	-1.9	3.90	2.09	
48 hr	15.64	+2.6	3.84	12.43	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			H carbon		
			Breakpoint Data		
			Neut. no. 40 hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 232-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-63-8 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.77	-	3.50	0.15	
16 hr	14.51	5.4	3.63	0.88	
24 hr	14.57	5.8	3.63	1.07	
40 hr	14.60	6.0	3.64	1.45	
48 hr	14.71	6.8	3.65	1.63	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			1.4		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			L carbon		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 237-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON F-1041 AT 600°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	432.2	21.9	14.13	0.08	
24 hr	515.7	45.5	15.27	0.19	
40 hr	851.0	140	19.38	0.31	
48 hr	1231.5	247	23.16	0.34	8
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	0.00	0.00	Sludge in oil:	200-mesh filter
	Ti	0.00	0.00		Centrifuge, vol %
	Ag	0.00	-0.02	Tube deposits:	Below oil level
	Steel	+0.02	-0.08		At and above oil level
	S. S.	0.00	0.00		None
	Cu	—	—		Very L var
	Mg	—	—	Test Conditions	
Metal discoloration, deposits, pitting, or etching:	Al	L yellow		Sample temperature, °F	600
	Ti	Blue-green		Sample volume, ml	250
	Ag	L brown		Air rate, liter/hr	20
	Steel	Dark gray		Condensate return	No
	S. S.	Blue-green			
	Cu	—			
	Mg	—			

TEST NO. 237-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON F-1041 AT 600°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	415.6	17.2	13.92	0.07	
24 hr	460.6	29.9	14.52	0.09	
40 hr	556.2	56.9	15.86	0.13	
48 hr	617.6	74.2	16.65	0.16	10
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	-0.02	-0.02	Sludge in oil:	200-mesh filter
	Ti	0.00	0.00		Centrifuge, vol %
	Ag	-0.08	-0.16	Tube deposits:	Below oil level
	Steel	+0.02	-0.12		At and above oil level
	S. S.	0.00	0.00		None
	Cu	+0.20	-0.95		Very L var
	Mg	+0.57	+0.14	Test Conditions	
Metal discoloration, deposits, pitting, or etching:	Al	L yellow		Sample temperature, °F	600
	Ti	L brown		Sample volume, ml	250
	Ag	L brown		Air rate, liter/hr	20
	Steel	Dark gray		Condensate return	No
	S. S.	Brown-purple			
	Cu	Dark brown			
	Mg	Gray			

TEST NO. 237-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON K-1051 AT 600°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	390.6	—	13.33	0.00	
16 hr	482.2	23.5	14.65	0.06	
24 hr	534.2	36.8	15.28	0.07	
40 hr	650.5	66.5	16.67	0.11	
48 hr	725.1	85.6	17.59	0.13	7
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	-0.02	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	0.00	-0.02		None
	Ag	-0.06	-0.14	Tube deposits: Below oil level At and above oil level	None
	Steel	+0.04	-0.16		Very L var
	S. S.	0.00	-0.02		
	Cu	+0.43	+0.04		
	Mg	+1.24	+0.39		
Metal discoloration, deposits, pitting, or etching:	Al	No change		Test Conditions	
	Ti	L brown		Sample temperature, °F	600
	Ag	L brown		Sample volume, ml	250
	Steel	Dark gray		Air rate, liter/hr	20
	S. S.	Brown-purple		Condensate return	No
	Cu	Dark brown			
	Mg	Purple			

TEST NO. 237-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-10 AT 600°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	348.0	—	12.90	0.00	
16 hr	377.2	8.4	13.32	0.06	
24 hr	382.7	10.0	13.43	0.05	
40 hr	389.6	12.0	13.51	0.03	
48 hr	396.6	14.0	13.63	0.05	8
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	0.00	-0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	0.00	-0.02		None
	Ag	0.00	0.00	Tube deposits: Below oil level At and above oil level	None
	Steel	+0.04	0.00		Very L var
	S. S.	0.00	0.00		
	Cu	—	—		
	Mg	—	—		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow		Test Conditions	
	Ti	L brown		Sample temperature, °F	600
	Ag	L yellow		Sample volume, ml	250
	Steel	Dark gray		Air rate, liter/hr	20
	S. S.	L brown		Condensate return	No
	Cu	—			
	Mg	—			

TEST NO. 237-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-26 AT 600°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	274.5	—	26.32	(a)	
16 hr	282.9	3.1	26.83	—	
24 hr	286.9	4.5	27.19	—	
40 hr	295.9	7.8	28.01	—	
48 hr	330.0	20.2	28.43	—	12
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	+0.12	+0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	-1.26	-1.91		None
	Ag	0.51	-0.51	Tube deposits: Below oil level At and above oil level	Thin
	Steel	+0.93	-1.09		White sludge
	S. S.	+0.08	+0.04		
	Cu	—	—		
	Mg	—	—		
Metal discoloration, deposits, pitting, or etching:	Al	L gray		Test Conditions	
	Ti	M etching		Sample temperature, °F	600
	Ag	L pitting		Sample volume, ml	250
	Steel	Dark gray		Air rate, liter/hr	20
	S. S.	Dark gray		Condensate return	No
	Cu	—			
	Mg	—			
(a) Sample insoluble in titration solvent.					

TEST NO. 238-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON F-1041 AT 650°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	1795	406	26.71	0.38	
24 hr	(a)	—	54.58	0.48	
40 hr	(a)	—	1556	0.70	19
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	+0.04	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	0.00	0.00		(a)
	Ag	+0.71	+0.30	Tube deposits: Below oil level At and above oil level	None
	Steel	+0.12	-1.25		M var
	S. S.	+0.08	0.00		
	Cu	—	—		
	Mg	—	—		
Metal discoloration, deposits, pitting, or etching:	Al	L brown		Test Conditions	
	Ti	Blue		Sample temperature, °F	650
	Ag	Brown		Sample volume, ml	250
	Steel	Brown		Air rate, liter/hr	20
	S. S.	Peacock		Condensate return	No
	Cu	—			
	Mg	—			
(a) Sample too thick for analysis—test terminated at 40 hr.					

TEST NO. 238-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON F-1041 AT 650°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	354.5	-	12.88	0.00		
16 hr	1103	211	21.46	0.15		
24 hr	(a)	-	30.61	0.19		
40 hr	(a)	-	96.36	0.33	7	
Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	0.00	0.00	Sludge in oil:	200-mesh filter	None (a)
	Ti	0.00	0.00		Centrifuge, vol %	
	Ag	-0.32	-0.32	Tube deposits:	Below oil level At and above oil level	None M var
	Steel	+0.12	-4.70			
	S. S.	+0.04	0.00			
	Cu	0.00	-1.42			
	Mg	+0.26	+0.10			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions	Sample temperature, °F	650	
	Ti	Purple		Sample volume, ml	250	
	Ag	L pitting		Air rate, liter/hr	20	
	Steel	Brown		Condensate return	No	
	S. S.	Blue-brown				
	Cu	Orange-brown				
	Mg	Brown				
(a) Sample too thick for analysis—test terminated at 40 hr.						

TEST NO. 238-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-10 AT 650°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, c./210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	348.0		12.90	0.00	6	
16 hr	404.6	16.3	13.71	0.00		
24 hr	426.6	22.6	14.06	0.00		
40 hr	474.8	36.4	14.71	0.02		
48 hr	506.6	45.6	15.13	0.05		
Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	0.00	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00	0.00		Centrifuge, vol %	None
	Ag	-0.12	-0.12	Tube deposits:	Below oil level At and above oil level	None L var
	Steel	+0.12	-1.64			
	S. S.	+0.02	0.00			
	Cu					
	Mg					
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions	Sample temperature, °F	650	
	Ti	L brown		Sample volume, ml	250	
	Ag	Yellow		Air rate, liter/hr	20	
	Steel	L blue		Condensate return	No	
	S. S.	L brown				
	Cu					
	Mg					

TEST NO. 238-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-10 AT 650°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	348.0	—	12.90	0.00	
16 hr	405.6	16.6	13.73	0.02	
24 hr	426.9	22.7	14.05	0.02	
40 hr	472.2	35.7	14.69	0.04	
48 hr	502.8	44.5	15.14	0.06	12

Metal Specimen Data				Normal Cleaning	Electro- cleaning	Test Cell Data		
Weight change, mg/cm ² :		Al	0.00	0.00	Sludge in oil:	200-mesh filter	None	
		Ti	0.00	0.00		Centrifuge, vol %	None	
		Ag	-0.10	-0.10		Tube deposits:	Below oil level	None
		Steel	+0.14	-0.59			At and above oil level	L var
		S. S.	+0.02	0.00				
		Cu	+0.08	-0.31				
	Mg	+0.22	+0.02					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow		Test Conditions			
		Ti	L brown		Sample temperature, °F	650		
		Ag	Yellow		Sample volume, ml	250		
		Steel	L blue		Air rate, liter/hr	20		
		S. S.	L brown		Condensate return	No		
		Cu	Orange-brown					
	Mg	Brown						

TEST NO. 241-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis, cs/100°F	100°F Vis increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.66	—	4.65	0.26	30(a)
7 days	17.47	-1.1	4.55	1.47	
14 days	32.17	+82.2	6.44	43.5	
21 days	—	—	—	72.6	
26 days	—	—	—	—	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil: 200-mesh filter (a)		
	Ti	+0.04	Centrifuge, vol % (a)		
	Ag	0.00	Tube deposits: Below oil level H var & carbon		
	Steel	+0.06	At and above oil level Yellowish-white crystals		
	Cu	-1.80			
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Breakpoint Data		
	Ti	Brown-purple	Neut. no. 5 days		
	Ag	Yellow-purple	100°F vis 8 days		
	Steel	Blue-purple	Test Conditions		
	Cu	Etched	Sample temperature, °F 347		
	Mg	Large pit	Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		
			No oil makeup for samples taken.		
(a) Test terminated after 21 days—sample solidified.					

TEST NO. 241-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.66	—	4.65	0.26	
7 days	17.41	-1.4	4.53	1.44	
14 days	15.78	-10.6	4.01	6.11	
21 days	12.185	+68.898	278	60.8	
26 days	(a)	—	—	61.9	21
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter (a)		
	Ti	+0.02	Centrifuge, vol % (a)		
	Ag	0.00	Tube deposits: Below oil level H var & carbon		
	Steel	0.00	At and above oil level Yellowish-white crystals		
	Cu	-1.87	Breakpoint Data		
	Mg	-1.91	Neut. no. 6 days		
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	100°F vis 17 days		
	Ti	Brown-purple	Test Conditions		
	Ag	Yellow-purple	Sample temperature, °F 347		
	Steel	Blue-purple	Sample volume, ml 200		
	Cu	Etched	Air rate, liter/hr 10		
	Mg	Large pits	Condensate return Yes		
(a) Solidified sample.					

TEST NO. 241-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	—	4.67	0.25	
7 days	17.34	-2.1	4.52	1.41	
14 days	17.64	-6.1	4.35	2.00	
21 days	64.96	+267	11.38	44.1	
26 days	(a)	—	—	54.1	20
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil: 200-mesh filter —		
	Ti	0.00	Centrifuge, vol % —		
	Ag	0.00	Tube deposits: Below oil level H var & carbon		
	Steel	0.00	At and above oil level Yellowish-white crystals		
	Cu	-2.86	Breakpoint Data		
	Mg	-0.06	Neut. no. 14 days		
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	100°F vis 15 days		
	Ti	Blue-yellow	Test Conditions		
	Ag	Yellow	Sample temperature, °F 347		
	Steel	Brown-yellow-blue	Sample volume, ml 200		
	Cu	Etched	Air rate, liter/hr 10		
	Mg	Small pit	Condensate return Yes		
(a) Solidified sample.					

TEST NO. 241-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11	—	3.76	0.07	
7 days	15.40	1.9	3.78	1.22	
14 days	15.33	1.5	3.74	1.82	
21 days	15.59	3.2	3.71	3.60	
26 days	17.80	17.8	4.05	9.78	11
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			At and above oil level		
			L var		
			None		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no. 18 days		
			100°F vis 23 days		
			Test Conditions		
			Sample temperature, °F 347		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 241-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.40	—	3.23	0.08	
7 days	14.75	10.1	3.45	0.54	
14 days	15.11	12.8	3.52	0.73	
21 days	15.45	15.3	3.57	0.80	
26 days	15.59	16.3	3.59	0.85	12
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no. 26+ days		
			100°F vis 26+ days		
			Test Conditions		
			Sample temperature, °F 347		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 241-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-25 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.64	—	3.31	0.10	
7 days	16.35	19.9	3.73	1.10	
14 days	17.23	26.3	3.78	1.66	
21 days	20.36	49.3	4.33	4.54	
26 days	23.39	71.5	4.79	5.69	12
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-1.20	Tube deposits:	Below oil level	H var & carbon
	Steel	0.00		At and above oil level	None
	Cu	-69.9			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no. 14 days		
	Ti	L tan	100°F vis 16 days		
	Ag	Charcoal gray	Test Conditions		
	Steel	Blue	Sample temperature, °F 347		
	Cu	H etching	Sample volume, ml 200		
	Mg	No change	Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 248-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55	—	4.61	0.21	
7 days	17.48	-0.4	4.57	1.41	
14 days	16.92	-3.6	4.45	2.22	
21 days	19.79	+12.8	4.52	25.4	
26 days	(a)	—	52.74	53.0	21
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	—
	Ti	+0.02		Centrifuge, vol %	—
	Ag	-0.10	Tube deposits:	Below oil level	H var & carbon
	Steel	+0.04		At and above oil level	None
	Cu	-0.51		White crystalline deposits in condenser	
	Mg	-0.95	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.		14 days
	Ti	L green	100°F vis		16 days
	Ag	Yellow	Test Conditions		
	Steel	Brown-green	Sample temperature, °F		347
	Cu	L etching	Sample volume, ml		200
	Mg	Large pits	Air rate, liter/hr		10
			Condensate return		Yes
(a) Sample semisolid.					

TEST NO. 248-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-18 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.55	—	4.61	0.21	
7 days	17.35	-1.1	4.54	1.28	
14 days	16.97	-3.3	4.40	2.24	
21 days	16.32	-7.0	4.02	13.35	
26 days	(a)	—	77.88	53.4	17

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	(a)
	Ti	+0.02		Centrifuge, vol %	(a)
	Ag	-0.04	Tube deposits:	Below oil level	H var & carbon
	Steel	+0.02		At and above oil level	None
	Cu	-1.16			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L green	Neut. no.	17 days	
	Ag	Yellow	100°F vis	23 days	
	Steel	Brown-green	Test Conditions		
	Cu	Etched	Sample temperature, °F	347	
	Mg	—	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

(a) Sample semisolid.

TEST NO. 248-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	—	4.67	0.25	19
7 days	17.46	-1.5	4.55	1.37	
14 days	16.74	-5.3	4.38	2.46	
21 days	18.93	+6.8	4.39	23.7	
26 days	(a)	—	88.56	52.4	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	—
	Ti	+0.04		Centrifuge, vol %	—
	Ag	-0.08	Tube deposits:	Below oil level	H var & carbon
	Steel	+0.02		At and above oil level	None
	Cu	-2.27		White crystalline deposits in condenser	
	Mg	+0.08			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L yellow-blue	Neut. no.	13 days	
	Ag	Yellow	100°F vis	19 days	
	Steel	Brown-green	Test Conditions		
	Cu	Etched	Sample temperature, °F	347	
	Mg	L yellow-green	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		
(a) Sample semisolidified.					

TEST NO. 248-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11		3.76	0.07	
7 days	15.49	2.5	3.82	0.96	
14 days	15.37	1.7	3.79	1.75	
21 days	15.48	2.4	3.76	2.10	
26 days	15.56	3.0	3.80	2.38	9

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-0.08	Tube deposits:	Below oil level	M & H var
	Steel	+0.02		At and above oil level	None
	Cu	-			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	Pale blue	Neut. no.	26+ days	
	Ag	Tan	100°F vis	26+ days	
	Steel	Brown-green	Test Conditions		
	Cu	-	Sample temperature, °F	347	
	Mg	-	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 248-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-25 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.64		3.31	0.10	
7 days	15.83	16.1	3.65	1.47	
14 days	18.60	36.7	4.09	3.35	
21 days	22.94	68.2	4.74	6.73	
26 days	25.47	86.7	5.11	7.87	12
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-1.72	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-112			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L tan	Neut. no.	11 days	
	Ag	Brown		100°F vis	9 days
	Steel	Blue	Test Conditions		
	Cu	Etched	Sample temperature, °F	347	
Mg	-	Sample volume, ml		200	
		Air rate, liter/hr		10	
		Condensate return	Yes		

TEST NO. 243-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-25 AT 347°F

	Vis, ca/100°F	100°F Vis Increase, %	Vis, ca/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.64	—	3.31	0.10	
7 days	15.27	12.0	3.56	1.16	
14 days	15.81	15.9	3.69	1.91	
21 days	16.14	18.3	3.73	2.10	
26 days	16.17	18.5	3.71	1.91	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level At and above oil level		
			None		
			None		
			Breakpoint Data		
			Neut. no. 26+ days		
			100°F vis 26+ days		
			Test Conditions		
			Sample temperature, °F 347		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 253-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-25 AT 385°F

	Vis, ca/100°F	100°F Vis Increase, %	Vis, ca/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.64	—	3.31	0.10	
16 hr	14.85	8.9	3.49	1.52	
24 hr	15.15	11.1	3.54	1.66	
40 hr	15.63	14.6	3.62	2.17	
48 hr	15.99	17.2	3.68	2.73	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level At and above oil level		
			None		
			None		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 253-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.40	-	3.57	0.21	2
16 hr	14.38	-0.1	3.52	0.45	
24 hr	14.41	+0.1	3.52	0.57	
40 hr	14.37	-0.2	3.50	0.82	
48 hr	14.41	+0.1	3.50	0.94	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	-0.02			
	Mg	-0.10	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	48+ hr	
	Ti	L brown		100°F vis	48+ hr
	Ag	L yellow	Test Conditions		
	Steel	Green-blue	Sample temperature, °F	385	
	Cu	L brown-orange		Sample volume, ml	200
	Mg	White	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 253-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.77	—	3.13	0.24	1
16 hr	13.47	5.5	3.24	0.63	
24 hr	13.64	6.8	3.27	0.84	
40 hr	13.79	8.0	3.30	1.22	
48 hr	13.90	8.8	3.31	1.36	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	+0.06			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	48+ hr	
	Ti	L brown		100°F vis	48+ hr
	Ag	L yellow	Test Conditions		
	Steel	Purple-blue	Sample temperature, °F	385	
	Cu	Brown-orange		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
			Condensate return	Yes	

TEST NO. 253-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-25 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.64	—	3.31	0.10	—			
16 hr	20.71	51.8	4.33	1.36	48.5			
24 hr	24.15	77.1	4.77	1.59	59.7			
40 hr	31.30	129	5.64	1.90	67.7			
48 hr	35.02	157	6.11	2.09	68.5	51	4.49	7.66
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	0.00	Tube deposits:		Below oil level	None	
		Steel	0.00			At and above oil level	None	
		Cu	-0.53					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L brown	Sample temperature, °F		385		
		Ag	Brown	Sample volume, ml		200		
		Steel	Blue-purple	Air rate, liter/hr		130		
		Cu	L brown-orange	Condensate return		No		
		Mg	No change					

TEST NO. 253-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.40	—	3.57	0.21	—			
16 hr	15.52	7.8	3.74	0.28	29.9			
24 hr	16.39	13.8	3.86	0.34	42.2			
40 hr	18.18	26.2	4.16	0.55	61.1			
48 hr	19.36	34.4	4.36	0.63	67.0	40	1.33	10.11
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	0.00	Tube deposits:		Below oil level	None	
		Steel	0.00			At and above oil level	None	
		Cu	-0.10					
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L brown	Sample temperature, °F		385		
		Ag	L yellow	Sample volume, ml		200		
		Steel	Blue	Air rate, liter/hr		130		
		Cu	Pink-orange	Condensate return		No		
		Mg	White					

TEST NO. 253-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	12.77	—	3.13	0.24	—	—	—	—
16 hr	15.87	24.3	3.60	0.40	38.7	—	—	—
24 hr	16.86	32.0	3.75	0.59	47.9	—	—	—
40 hr	18.70	46.4	4.00	0.90	60.9	—	—	—
48 hr	19.73	54.5	4.18	1.05	64.6	42	2.10	8.62
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	0.00				
			Steel	0.00	Tube deposits:		Below oil level	None
			Cu	-0.04			At and above oil level	None
			Mg	+0.26				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	L brown	Sample temperature, °F		385	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Green-blue	Air rate, liter/hr		130	
			Cu	Brown-orange	Condensate return		No	
			Mg	Gray deposit				

TEST NO. 255-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-12 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.79	—	3.52	0.25	—	—	—	—
16 hr	15.37	11.5	3.81	1.26	17.2	—	—	—
24 hr	15.57	12.9	3.84	1.31	24.5	—	—	—
40 hr	15.74	14.1	3.88	1.35	37.9	—	—	—
48 hr	15.75	14.2	3.85	1.48	44.3	30	4.29	12.01
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	+0.18	Sludge in oil:		200-mesh filter	None
			Ti	+0.14			Centrifuge, vol %	2.8
			Ag	+0.20				
			Steel	+0.20	Tube deposits:		Below oil level	H var
			Cu	-0.01			At and above oil level	None
			Mg	+0.26				
Metal discoloration, deposits, pitting, or etching:			Al	Brown	Test Conditions			
			Ti	Brown	Sample temperature, °F		385	
			Ag	Brown	Sample volume, ml		200	
			Steel	Brown	Air rate, liter/hr		130	
			Cu	Brown-orange	Condensate return		No	
			Mg	Brown				

TEST NO. 255-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-64-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	16.84	--	4.29	0.11	—			
16 hr	18.24	8.3	4.56	1.19	23.2			
24 hr	18.79	11.6	4.68	1.37	32.8			
40 hr	20.21	20.2	4.98	1.80	50.1			
48 hr	21.42	27.2	5.21	2.58	57.9	35	4.24	11.23
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	-0.02			Centrifuge, vol %	Trace	
		Ag	0.00	Tube deposits:		Below oil level	L var	
		Steel	+0.02			At and above oil level	None	
		Cu	-0.04					
		Mg	-0.04					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Blue					
		Ag	No change	Sample temperature, °F	385			
		Steel	Blue-green	Sample volume, ml	200			
		Cu	Brown	Air rate, liter/hr	130			
		Mg	Gray	Condensate return	No			

TEST NO. 255-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71	—	4.67	0.24	—
16 hr	17.12	-3.3	4.46	1.60	—
24 hr	17.04	-3.8	4.44	1.92	—
40 hr	16.48	-6.0	4.30	2.52	—
48 hr	16.25	-8.2	4.01	11.90	4
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:	
		Ti	0.00		
		Ag	-0.02	Tube deposits:	
		Steel	0.00		
		Cu	-0.28		
		Mg	-0.24		
Metal discoloration, deposits, pitting, or etching:		Al	No change	Breakpoint Data	
		Ti	L blue	Neut. no.	
		Ag	L pink-yellow	41 hr	
		Steel	Blue-green	100°F vis	
		Cu	Brown-orange	48+ hr	
		Mg	L pitting	Test Conditions	
		Sample temperature, °F		385	
		Sample volume, ml		200	
		Air rate, liter/hr		10	
		Condensate return		Yes	

TEST NO. 255-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-20 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.75	-	4.68	0.26	3
16 hr	17.04	-4.0	4.44	1.62	
24 hr	16.89	-4.8	4.39	1.94	
40 hr	16.37	-7.8	4.25	2.58	
48 hr	15.80	-11.0	3.94	10.47	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	H var & carbon
	Steel	0.00		At and above oil level	None
	Cu	-0.34			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	40 hr	
	Ti	Purple		100°F vis	48+ hr
	Ag	L pink-yellow	Test Conditions		
	Steel	Blue-green	Sample temperature, °F	385	
	Cu	Brown-orange		Sample volume, ml	200
	Mg	L pitting	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 255-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-5 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.04	-	3.75	0.05	7
16 hr	14.92	-0.8	3.68	1.23	
24 hr	14.91	-0.9	3.67	1.53	
40 hr	14.79	-1.7	3.63	1.56	
48 hr	14.70	-2.3	3.62	1.84	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.12			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	48+ hr	
	Ti	Brown		100°F vis	48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	Brown-orange		Sample volume, ml	200
	Mg	L yellow	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 255-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-5 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.04	-	3.75	0.05				
16 hr	16.96	12.8	4.05	1.12	33.9			
24 hr	18.34	21.9	4.28	1.12	47.8			
40 hr	22.62	50.4	4.96	1.29	67.8			
48 hr	25.64	70.5	5.44	1.53	72.5	45	1.53	9.08
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² : Al -0.02 Ti 0.00 Ag -0.02 Steel 0.00 Cu -0.18 Mg +0.55					Sludge in oil: 200-mesh filter Centrifuge, vol % None			
					Tube deposits: Below oil level At and above oil level None			
Metal discoloration, deposits, pitting, or etching: Al 1 yellow Ti 1 brown Ag 1 yellow Steel Blue Cu Brown-green Mg Gray deposit					Test Conditions			
					Sample temperature, °F 385			
					Sample volume, ml 200			
					Air rate, liter/hr 130 Condensate return No			

TEST NO. 261-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.40		3.23	0.08	
7 days	14.75	10.1	3.46	0.62	
14 days	15.24	13.7	3.53	0.83	
21 days	15.64	16.7	3.61	0.94	
26 days	15.81	18.0	3.62	0.91	15
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al 0.00 Ti -0.02 Ag -0.08 Steel +0.04 Cu +0.18 Mg -0.02 Metal discoloration, deposits, pitting, or etching: Al No change Ti 1. brown Ag No change Steel Red-brown Cu Red-brown Mg No change			Sludge in oil:	200-mesh filter	None
				Centrifuge, vol %	None
			Tube deposits:	Below oil level	None
				At and above oil level	None
			Breakpoint Data		
			Neut. no.	26+ days	
			100°F vis	26+ days	
			Test Conditions		
			Sample temperature, °F	347	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 261-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11	—	3.76	0.07	
7 days	15.42	2.1	3.79	1.32	
14 days	15.46	2.3	3.86	1.97	
21 days	15.60	3.2	3.77	2.28	
26 days	15.82	4.7	3.81	2.46	11
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	Trace
	Ag	-0.02	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	M var
	Cu	-0.22			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L pale blue	Neut. no.	26+ days	
	Ti	Blue		100°F vis	26+ days
	Ag	L orange & yellow	Test Conditions		
	Steel	Pale green	Sample temperature, °F	347	
	Cu	Purple, brown & orange		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
			Condensate return		Yes

TEST NO. 261-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-25 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.64		3.31	0.10	
7 days	15.34	12.5	3.59	1.30	
14 days	15.88	16.4	3.66	1.57	
21 days	16.18	18.6	3.71	1.64	
26 days	16.22	18.9	3.72	1.65	30
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-0.51	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	+0.04			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	26+ days	
	Ti	L brown		100°F vis	26+ days
	Ag	L etching	Test Conditions		
	Steel	Blue	Sample temperature, °F	347	
	Cu	Yellow		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
			Condensate return		Yes

TEST NO. 261-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	-	4.67	0.25	
7 days	17.69	-0.2	4.63	1.28	
14 days	17.29	-2.4	4.51	1.76	
21 days	16.89	-4.7	4.41	2.27	
26 days	16.87	-4.8	4.40	2.32	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-0.10	Tube deposits:	Below oil level	L var
	Steel	+0.02		At and above oil level	M var
	Cu	-			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	L pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	Brown	100°F vis	26+ days	
	Steel	Blue, green, & yellow	Test Conditions		
	Cu	-	Sample temperature, °F	347	
	Mg	-	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 261-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	-	4.67	0.25	
7 days	17.80	+0.5	4.66	1.27	
14 days	17.38	-1.9	4.56	1.75	
21 days	17.06	-3.7	4.46	2.03	
26 days	16.99	-4.1	4.44	2.33	10
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	Trace
	Ag	-0.08	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	M var
	Cu	+0.08			
	Mg	+0.10			
Metal discoloration, deposits, pitting, or etching:	Al	L pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	Brown	100°F vis	26+ days	
	Steel	Blue, green, & brown	Test Conditions		
	Cu	Yellow	Sample temperature, °F	347	
	Mg	Gray, yellow, & pink	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 261-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.50		5.08	0.07	
7 days	31.24	13.6	5.50	0.34	
14 days	32.65	16.5	5.60	0.38	
21 days	32.68	18.8	5.68	0.46	
26 days	32.87	19.5	5.71	0.51	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	-0.08	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-0.04			
	Mg	+0.75			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	26+ days	
	Ag	Yellow	100°F vis	26+ days	
	Steel	Blue, green, & yellow	Test Conditions		
	Cu	Yellow & orange	Sample temperature, °F	347	
	Mg	Gray	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 268-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-8 AT 385°F

TEST NO. 208-F, RESULTS OF REFLEX OXIDATION TEST ON C-67-B AT 385°F					
	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.24	-	3.26	0.23	4
16 hr	14.29	7.9	3.44	1.02	
24 hr	14.42	8.9	3.46	1.19	
40 hr	14.71	11.1	3.51	1.44	
48 hr	14.82	11.9	3.53	1.57	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	-0.02		At and above oil level	None
	Cu	-0.24			
	Mg	+0.02	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	48+ hr	
	Ti	L brown	100°F vis	48+ hr	
	Ag	L yellow			
	Steel	Purple-blue	Test Conditions		
	Cu	L etching			
	Mg	Tan	Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 268-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	14.87	—	3.69	0.04	3	
16 hr	15.04	+1.1	3.74	0.72		
24 hr	15.01	+0.9	3.70	0.85		
40 hr	14.85	-0.1	3.67	1.08		
48 hr	14.79	-0.5	3.66	1.36		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	0.00		Tube deposits:	Below oil level	M var
	Steel	+0.02			At and above oil level	None
	Cu	-0.15				
	Mg	+0.06	Breakpoint Data			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	48+ hr		
	Ti	Brown-yellow		100°F vis		48+ hr
	Ag	Yellow	Test Conditions			
	Steel	Blue	Sample temperature, °F	385		
	Cu	Brown-purple-green	Sample volume, ml	200		
	Mg	Tan	Air rate, liter/hr	10		
			Condensate return	Yes		

TEST NO. 268-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	13.26	—	3.21	0.05	3	
16 hr	13.96	5.3	3.33	0.48		
24 hr	14.15	6.7	3.36	0.63		
40 hr	14.32	8.0	3.41	0.94		
48 hr	14.49	9.3	3.42	1.11		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	0.00		Tube deposits:	Below oil level	None
	Steel	-0.02			At and above oil level	None
	Cu	-0.04				
	Mg	+0.02	Breakpoint Data			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	48+ hr		
	Ti	L brown		100°F vis	48+ hr	
	Ag	L yellow	Test Conditions			
	Steel	Blue	Sample temperature, °F	385		
	Cu	Yellow-orange	Sample volume, ml	200		
	Mg	No change	Air rate, liter/hr	10		
			Condensate return	Yes		

TEST NO. 268-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-2 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.24	-	3.26	0.23	-			
16 hr	15.44	6.6	3.65	0.80	39.5			
24 hr	16.60	25.4	3.85	0.92	55.1			
40 hr	20.53	55.0	4.47	1.30	77.4			
48 hr	25.29	91.0	5.16	1.56	83.1	54	1.92	10.76
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:		200-mesh filter	None		
	Ti	0.00			Centrifuge, vol %	None		
	Ag	-0.02	Tube deposits:	Below oil level At and above oil level	None None			
	Steel	0.00						
	Cu	-0.41						
	Mg	+0.02						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		Sample temperature, °F	385		
	Ti	L brown			Sample volume, ml	200		
	Ag	L yellow	Air rate, liter/hr	130				
	Steel	Purple-blue	Condensate return	No				
	Cu	L etching						
	Mg	Tan						

TEST NO. 268-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	14.87	—	3.69	0.04	—			
16 hr	17.13	15.2	4.10	0.52	37.4			
24 hr	18.82	26.6	4.39	0.58	52.3			
40 hr	23.52	58.2	5.15	0.85	72.3			
48 hr	26.92	81.0	5.69	1.11	76.3	47	1.33	9.17
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %		None		
		Ti	0.00			None		
		Ag	0.00	Tube deposits: Below oil level At and above oil level		None		
		Steel	0.00			Very L var		
		Cu	-0.19					
		Mg	+0.06					
Metal discoloration, deposits, pitting, or etching:		Al	L yellow	Test Conditions				
		Ti	Brown-yellow					
		Ag	Yellow	Sample temperature, °F		385		
		Steel	Blue	Sample volume, ml		200		
		Cu	Purple-dark brown	Air rate, liter/hr		130		
		Mg	Tan	Condensate return		No		

TEST NO. 268-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.26	—	3.21	0.05	—	—	—	—
16 hr	16.22	22.3	3.67	0.38	42.8	—	—	—
24 hr	18.50	39.5	3.99	0.52	60.2	—	—	—
40 hr	27.13	105	5.10	0.82	82.4	—	—	—
48 hr	35.64	169	6.05	0.88	85.6	53	1.33	9.28
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :			Al	0.00	Sludge in oil:		200-mesh filter	None
			Ti	0.00			Centrifuge, vol %	None
			Ag	-0.02	Tube deposits:		Below oil level	None
			Steel	-0.02			At and above oil level	None
			Cu	0.00				
			Mg	+0.02				
Metal discoloration, deposits, pitting, or etching:			Al	No change	Test Conditions			
			Ti	L brown	Sample temperature, °F		385	
			Ag	L yellow	Sample volume, ml		200	
			Steel	Blue	Air rate, liter/hr		130	
			Cu	Orange-yellow	Condensate return		No	
			Mg	No change				

TEST NO. 269-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	29.19	—	5.41	0.10		
16 hr	31.11	6.6	5.63	0.41		
24 hr	31.57	8.2	5.69	0.45		
40 hr	32.22	10.4	5.75	0.53		
48 hr	32.69	12.0	5.81	0.57	4	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	0.00		Tube deposits:	Below oil level	None
	Steel	+0.02			At and above oil level	None
	Cu	-0.41				
	Mg	0.00				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data			
	Ti	Tan	Neut. no.	48+ hr		
	Ag	No change	100°F vis	48+ hr		
	Steel	Blue-purple	Test Conditions			
	Cu	L etching	Sample temperature, °F	385		
	Mg	No change	Sample volume, ml	200		
			Air rate, liter/hr	10		
			Condensate return	Yes		

TEST NO. 269-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-5 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.63	—	3.30	0.22	
16 hr	14.37	5.4	3.41	0.49	
24 hr	14.57	6.9	3.45	0.67	
40 hr	14.71	7.9	3.46	0.93	
48 hr	14.87	9.1	3.49	1.09	0
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00			
	Steel	+0.02		Tube deposits:	Below oil level
	Cu	+0.08		At and above oil level	None
Metal discoloration, deposits, pitting, or etching:	Mg	0.00	Breakpoint Data		L var
	Al	No change		Neut. no.	48+ hr
	Ti	Tan		100°F vis	48+ hr
	Ag	Yellow		Test Conditions	
	Steel	Purple-blue		Sample temperature, °F	385
	Cu	Orange-brown		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 269-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-7 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.34	—	4.58	0.26	
16 hr	16.99	-2.0	4.45	0.91	
24 hr	16.84	-2.9	4.41	1.12	
40 hr	16.19	-6.6	4.24	1.85	
48 hr	15.32	-11.6	3.90	6.65	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00			
	Steel	0.00		Tube deposits:	Below oil level
	Cu	-0.02		At and above oil level	L var
Metal discoloration, deposits, pitting, or etching:	Mg	+0.02	Breakpoint Data		None
	Al	Tan		Neut. no.	39 hr
	Ti	Brown-purple		100°F vis	48+ hr
	Ag	Pink-yellow		Test Conditions	
	Steel	Blue-green		Sample temperature, °F	385
	Cu	Orange-pink-green		Sample volume, ml	200
	Mg	L brown		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 269-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	29.19	--	5.41	0.10	--			
16 hr	31.83	9.0	5.71	0.31	0.9			
24 hr	32.52	11.4	5.80	0.42	1.3			
40 hr	33.75	15.6	5.94	0.53	2.2			
48 hr	34.69	18.8	6.05	0.62	2.5	10	10.70	20.49
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	0.00					
		Steel	0.00	Tube deposits:		Below oil level	None	
		Cu	-0.71			At and above oil level	None	
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Tan					
		Ag	No change	Sample temperature, °F	385			
		Steel	Blue-purple	Sample volume, ml	200			
		Cu	L etching	Air rate, liter/hr	130			
		Mg	No change	Condensate return	No			

TEST NO. 269-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-5 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.63	—	3.30	0.22	—	—	—	—
16 hr	15.70	15.2	3.61	0.31	33.6	—	—	—
24 hr	16.90	24.0	3.84	0.44	46.4	—	—	—
40 hr	19.99	46.7	4.36	0.73	64.2	—	—	—
48 hr	22.51	65.1	4.59	0.80	67.9	47	1.56	10.36
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	Trace	
		Ag	0.00					
		Steel	+0.02	Tube deposits:		Below oil level	None	
		Cu	-0.06			At and above oil level	None	
		Mg	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	Tan					
		Ag	Yellow	Sample temperature, °F	385			
		Steel	Brown-purple	Sample volume, ml	200			
		Cu	Orange-pink	Air rate, liter/hr	130			
		Mg	No change	Condensate return	No			

TEST NO. 269-6. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-7 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	17.34	—	4.58	0.26	—	—	—	—
16 hr	19.32	11.4	5.02	0.67	37.4	—	—	—
24 hr	21.08	21.6	5.43	0.73	54.8	—	—	—
40 hr	29.23	68.6	7.21	1.16	86.9	—	—	—
48 hr	47.31	173	10.97	1.68	97.1	59	1.59	10.82
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	-0.02	Sludge in oil:		200-mesh filter	None	
		Ti	0.00			Centrifuge, vol %	None	
		Ag	+0.02			Tube deposits:	Below oil level	
		Steel	+0.02				At and above oil level	
		Cu	+0.06				None	
		Mg	+0.12				None	
Metal discoloration, deposits, pitting, or etching:		Al	Tan	Test Conditions				
		Ti	Brown					
		Ag	Pink-yellow	Sample temperature, °F	385			
		Steel	Blue-green	Sample volume, ml	200			
		Cu	Orange, pink & green	Air rate, liter/hr	130			
		Mg	L brown	Condensate return	No			

TEST NO. 271-1. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON ATL-652 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.65	—	3.54	0.19				
18 hr	31.13	98.9	5.50	5.97	73.2	40	17.46	11.19
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :		Al	0.00	Sludge in oil:		200-mesh filter	Trace	
		Ti	+0.02			Centrifuge, vol %	0.6	
		Ag	0.00	Tube deposits:		Below oil level	L var	
		Steel	0.00			At and above oil level	None	
		S. S.	0.00					
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions				
		Ti	L brown	Sample temperature, °F		425		
		Ag	L yellow	Sample volume, ml		200		
		Steel	Blue-green	Air rate, liter/hr		130		
		S. S.	Purple	Condensate return		No		

TEST NO. 271-2. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON ATL-652 AT 425°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt, g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	15.65		3.54	0.19				
18 hr	33.70	115	5.78	7.21	75.3	42	15.54	11.56
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		Trace 0.6			
	Ti	+0.02						
	Ag	0.00						
	Steel	0.00						
	S. S.	0.00						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Tube deposits: Below oil level At and above oil level		L var None			
	Ti	L. brown						
	Ag	L. yellow						
	Steel	Blue-green						
	S. S.	Purple						
					Test Conditions			
					Sample temperature, °F		425	
					Sample volume, ml		200	
					Air rate, liter/hr		130	
					Condensate return		No	

TEST NO. 272-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5		12.88	0.00	
16 hr	472.8	33.4	14.70	0.18	
24 hr	605.8	70.9	16.57	0.22	
40 hr	1171	230	22.47	0.35	
48 hr	1666	370	27.00	0.42	1
Metal Specimen Data				Test Cell Data	
Weight change, mg/cm ² :		Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %	
		Ti	+0.04		
		Ag	+0.08		
		Steel	+0.08		
		Cu	0.59		
Metal discoloration, deposits, pitting, or etching:		Mg	+0.43	Tube deposits: Below oil level At and above oil level	
		Al	Yellow		
		Ti	Red-brown		
		Ag	White-brown		
		Steel	Gray		
				Test Conditions	
				Sample temperature, °F	
				608	
				Sample volume, ml	
				200	
				Air rate, liter/hr	
				10	
				Condensate return	
				Yes	

TEST NO. 272-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	34.22		4.07	0.00	
16 hr	27.31	12.8	4.38	0.13	
24 hr	27.62	14.0	4.42	0.06	
40 hr	28.58	18.0	4.51	0.07	
48 hr	28.48	17.6	4.51	0.04	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.20	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.22		Centrifuge, vol %	0.4
	Ag	0.00	Tube deposits:	Below oil level	L carbon
	Steel	+0.43		At and above oil level	L carbon
	Cu	-5.60			
	Mg	+1.00	Test Conditions		
Metal discoloration, deposits, pitting, or etching:	Al	L brown spots	Sample temperature, °F		
	Ti	Tan-purple	Sample volume, ml		
	Ag	L brown	Air rate, liter/hr		
	Steel	Tan	Condensate return		
	Cu	Etching and pitting			
	Mg	D gray			

TEST NO. 272-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
16 hr	388.9	8.8	13.48	0.08	
24 hr	394.9	10.4	13.58	0.04	
40 hr	406.2	13.6	13.77	0.04	
48 hr	413.5	15.6	13.87	0.07	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.08		At and above oil level	Very L var
	Cu	-0.06			
	Mg	+0.08	Test Conditions		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Sample temperature, °F		
	Ti	Yellow-brown	Sample volume, ml		
	Ag	Yellow	Air rate, liter/hr		
	Steel	Green-purple	Condensate return		
	Cu	Orange-brown			
	Mg	Brown			

TEST NO. 272-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	460.6	29.9	14.54	0.17	
24 hr	574.3	62.0	16.06	0.23	
40 hr	981.3	177	20.64	0.26	
48 hr	1311	270	23.83	0.38	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	-0.34	Tube deposits:	Below oil level	None
	Steel	+0.08		At and above oil level	M var
	Cu	-1.07			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	Yellow	Sample temperature, °F		608
	Ti	Red-brown	Sample volume, ml		200
	Ag	White	Air rate, liter/hr		10
	Steel	Gray	Condensate return		Yes
	Cu	Orange-green			
	Mg	—			

TEST NO. 272-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	—	4.07	0.00	
16 hr	27.11	11.9	4.37	0.10	
24 hr	27.51	13.6	4.40	0.07	
40 hr	28.44	17.4	4.49	0.05	
48 hr	28.45	17.5	4.50	0.08	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.24	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.20		Centrifuge, vol %	0.4
	Ag	0.00	Tube deposits:	Below oil level	L carbon
	Steel	+0.36		At and above oil level	L carbon
	Cu	-6.25			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	L brown spots	Sample temperature, °F		608
	Ti	Brown-purple	Sample volume, ml		200
	Ag	L brown	Air rate, liter/hr		10
	Steel	Tan	Condensate return		Yes
	Cu	Etching and pitting			
	Mg	—			

TEST NO. 272-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	387.4	8.3	13.44	0.08	
24 hr	394.6	10.3	13.59	0.08	
40 hr	406.8	13.8	13.77	0.08	
48 hr	412.6	15.4	13.88	0.06	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			Very L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			608		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 272-7. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss. wt %
Initial	354.5	—	12.88	0.00	78
16 hr	404.7	14.2	13.69	0.02	
24 hr	454.3	28.2	14.37	0.02	
40 hr	(a)	—	—	—	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ₂ :		Al +0.02	Sludge in oil: 200-mesh filter		None
		Ti +0.06	Centrifuge, vol %		None
		Ag 0.00			
		Steel +0.10	Tube deposits: Below oil level		None
		S. S. +0.02	At and above oil level		None
		Cu +0.14			
Metal discoloration, deposits pitting, or etching:		Al Gray	Test Conditions		
		Ti Yellow-brown	Sample temperature, °F		608
		Ag L brown-white	Sample volume, ml		200
		Steel Gray	Air rate, liter/hr		130
		S. S. Tan-pink	Condensate return		No
		Cu Dark gray			
(a) Sample test cell dry at 40 hours.					

TEST NO. 272-8. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
16 hr	399.9	11.8	13.60	0.09	
24 hr	440.6	23.2	14.24	0.10	
40 hr	(a)				17
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al 0.00 Ti +0.06 Ag 0.00 Steel +0.12 S. S. +0.02 Cu +0.10	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None
			Tube deposits: Below oil level At and above oil level		M var M var
Metal discoloration, deposits pitting, or etching:		Al L yellow Ti Yellow-brown Ag Yellow Steel Brown-green-purple S. S. L. brown-purple-pink Cu Orange-gray-brown	Test Conditions		
			Sample temperature, °F		608
			Sample volume, ml		200
			Air rate, liter/hr		130
			Condensate return		No
(a) Sample test cell dry at 40 hours.					

TEST NO. 273-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	354.5		12.88	0.00		
16 hr	1,043	194	20.98	0.33		
24 hr	2,331	558	30.50	0.30		
40 hr	18,745	5188	79.46	0.45		
48 hr	(a)		171.4	0.30	2	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	-0.55		Tube deposits:	Below oil level	None
	Steel	0.00			At and above oil level	M var
	Cu	-1.10				
	Mg	+1.48				
Metal discoloration, deposits, pitting, or etching:	Al	L. yellow	Test Conditions			
	Ti	Blue	Sample temperature, °F	644		
	Ag	L. etching	Sample volume, ml	200		
	Steel	Black	Air rate, liter/hr	10		
	Cu	Brown-orange	Condensate return	Yes		
	Mg	Dark gray spots				
(a) Sample semisolidified at 100°F						

TEST NO. 273-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22		4.07	0.00	
16 hr	29.52	21.9	4.57	0.01	
24 hr	30.97	27.9	4.69	0.05	
40 hr	34.16	41.0	4.99	0.07	
48 hr	35.19	45.3	5.09	0.10	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.10	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-1.42	Tube deposits:	Below oil level	L var
	Steel	+0.10		At and above oil level	L var & carbon
	Cu	-7.60			
	Mg	+0.53			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F	644	
	Al	L tan	Sample volume, ml	200	
	Ti	Brown-blue	Air rate, liter/hr	10	
	Ag	L etching	Condensate return	Yes	
	Steel	Green-purple			
	Cu	M etching			
	Mg	Dark gray deposits			

TEST NO. 273-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	90°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
16 hr	411.8	15.2	13.81	0.06	
24 hr	426.7	19.3	14.01	0.02	
40 hr	464.7	29.9	14.58	0.03	
48 hr	486.1	35.9	14.92	0.02	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.10	Tube deposits:	Below oil level	L var
	Steel	-0.06		At and above oil level	Very L var
	Cu	+0.16			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Brown-yellow	Sample temperature, °F	644	
	Ag	Yellow	Sample volume, ml	200	
	Steel	Pale blue	Air rate, liter/hr	10	
	Cu	Black spots	Condensate return	Yes	
	Mg	L yellow			

TEST NO. 273-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5		12.88	0.00	
16 hr	1,050	196	21.04	0.26	
24 hr	2,109	495	29.30	0.25	
40 hr	15,096	4158	70.54	0.40	
48 hr	(a)		140.3	0.76	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	-0.65	Tube deposits:	Below oil level	L var
	Steel	+1.06		At and above oil level	H var
	Cu	-0.89			
Mg	-				
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Blue-green	Sample temperature, °F	644	
	Ag	White	Sample volume, ml	200	
	Steel	Black deposits	Air rate, liter/hr	10	
	Cu	L etching	Condensate return	Yes	
Mg	-				
(a) Sample semisolidified at 100°.					

TEST NO. 273-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22		4.07	0.00	
16 hr	29.49	21.8	4.58	0.03	
24 hr	30.83	27.3	4.71	0.05	
40 hr	34.55	42.7	5.02	0.08	
48 hr	35.86	48.1	5.14	0.08	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace		
			Centrifuge, vol % Trace		
			Tube deposits: Below oil level L var		
			At and above oil level L var & L carbon		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F 644		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 273-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
16 hr	406.0	13.5	13.71	0.02	
24 hr	426.4	19.2	14.01	0.04	
40 hr	464.1	29.8	14.56	0.05	
48 hr	482.7	35.0	14.85	0.08	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			L var		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			644		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 273-7. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON E-1041 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5		12.88	0.00	
16 hr	519.3	46.5	15.27	0.01	
24 hr	(a)				85
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
	Al	+0.10			
	Ti	+0.04			
	Ag	0.04			
	Steel	+0.02		Tube deposits: Below oil level	None
	S. S.	0.04		At and above oil level	None
	Cu	+0.10			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	1 gray		Sample temperature, °F	644
	Ti	Brown-yellow		Sample volume, ml	200
	Ag	1 brown		Air rate, liter/hr	130
	Steel	Black		Condensate return	No
	S. S.	1 tan			
	Cu	Gray			
(a) Test cell dry at 24 hour sampling period					

TEST NO. 273-8. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
16 hr	445.8	24.7	14.33	0.04	
24 hr	(a)				75
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil: 200-mesh filter		
	Ti	0.00	Centrifuge, vol %		
	Ag	-0.08	Tube deposits: Below oil level		
	Steel	-0.04	At and above oil level		
	S. S.	-0.06	None		
	Cu	-0.14	None		
Metal discoloration, deposits pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Brown-yellow	Sample temperature, °F		
	Ag	Yellow	Sample volume, ml		
	Steel	Pale blue	Air rate, liter/hr		
	S. S.	L pink	Condensate return		
	Cu	Black-orange-purple			
(a) Test cell dry at 24-hour sampling period.					

TEST NO. 275-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-10 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.32		4.61	0.26	
16 hr	16.71	-3.3	4.38	1.00	
24 hr	16.56	-4.4	4.34	1.14	
40 hr	15.31	-11.6	3.87	5.52	
48 hr	16.36	-5.5	3.98	13.20	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % Trace		
			Tube deposits: Below oil level None At and above oil level M var		
			Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:			Neut. no. 26 hr		
			100°F vis 45 hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 275-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-13 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.47	-	3.22	0.10	
16 hr	14.06	4.4	3.32	0.26	
24 hr	14.38	6.8	3.36	0.37	
40 hr	14.65	8.8	3.41	0.60	
48 hr	14.77	9.7	3.45	0.75	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter		None
	Ti	0.00	Centrifuge, vol %		Trace
	Ag	0.00	Tube deposits: Below oil level		None
	Steel	+0.02	At and above oil level		L var
	Cu	-0.30			
	Mg	+0.10			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut no	48+ hr	
			100°F vis	48+ hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 275-3. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-66-9 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis, cs/100°F
Initial	13.90		3.34	0.06				
16 hr	15.80	13.7	3.64	0.42	30.7			
24 hr	16.89	21.5	3.82	0.64	43.5			
40 hr	20.62	48.3	4.32	0.88	65.0			
48 hr	24.66	77.4	4.87	0.96	72.4	44	1.73	10.42
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:		200-mesh filter	None		
	Ti	0.00			Centrifuge, vol %	Trace		
	Ag	0.00	Tube deposits:		Below oil level	None		
	Steel	0.00			At and above oil level	None		
	Cu	-0.06						
	Mg	+0.02						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions					
	Ti	Tan						
	Ag	L. yellow						
	Steel	Blue						
	Cu	Orange-pink	Sample temperature, °F	385				
	Mg	*Gray	Sample volume, ml	200				
			Air rate, liter/hr	130				
			Condensate return	No				

TEST NO. 275-4. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-10 AT 385°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis. cs/100°F
Initial	17.32		4.61	0.26				
16 hr	19.27	11.3	4.98	0.73	40.2			
24 hr	21.23	22.6	5.44	0.81	58.2			
40 hr	31.94	84.4	7.73	1.30	89.4			
48 hr	68.97	298	15.49	2.39	97.7	61	1.68	10.82
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None (a)			
	Ti	+0.02						
	Ag	-0.02						
	Steel	0.00						
	Cu	0.00						
	Mg	+0.36						
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Test Conditions		Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No			
	Ti	Brown						
	Ag	Yellow-pink						
	Steel	Blue						
	Cu	Light brown-green						
	Mg	Gray deposits						
(a) Insufficient sample.								

TEST NO. 275-5. RESULTS OF NONREFLUX OXIDATION-CORROSION TEST ON O-67-13 AT 385°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Overhead Wt. g	Oil Loss, wt %	Overhead Sample	
							Acidity, mg KOH/g	Vis., cs/100°F
Initial	13.47		3.22	0.10				
16 hr	14.93	10.8	3.45	0.20	30.9			
24 hr	15.44	14.5	3.67	0.25	44.5			
40 hr	18.08	34.2	3.93	0.30	67.6			
48 hr	20.16	49.7	4.24	0.42	75.4	46	1.22	11.18
Metal Specimen Data					Test Cell Data			
Weight change, mg/cm ²	Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol None Trace					
	Ti	0.00						
	Ag	0.00						
	Steel	+0.02	Tube deposits: Below oil level At and above oil level None None					
	Cu	0.14						
	Mg	+0.46						
Metal discoloration, deposits, pitting, or etching.	Al	No change	Test Conditions					
	Ti	Tan						
	Ag	No change						
	Steel	Blue	Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 130 Condensate return No					
	Cu	Light brown-pink						
	Mg	Gray deposits						

TEST NO. 277-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-720 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26		3.39	0.38	
7 days	13.70	3.3	3.48	1.21	
14 days	14.98	13.0	3.63	7.58	
21 days	83.41	529	12.71	52.4	
26 days	(a)		700.7	51.6	21
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil: 200-mesh filter		
	Ti	0.00	Centrifuge, vol %		
	Ag	-0.08	Tube deposits: Below oil level		
	Steel	+0.02	At and above oil level		
	Cu	-1.07	I var		
	Mg	0.00	H var		
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Breakpoint Data		
	Ti	Blue-green	Neut. no. 6 days		
	Ag	Yellow	100°F vis 13 days		
	Steel	Yellow-green	Test Conditions		
	Cu	Etching & pitting	Sample temperature, °F 347		
	Mg	L. yellow	Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		
(a) Sample semisolidified.					

TEST NO. 277-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-750 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.73		3.48	0.23	
7 days	14.34	4.4	3.41	0.98	
14 days	14.51	5.7	3.55	1.31	
21 days	14.62	6.5	3.55	1.60	
26 days	14.71	7.1	3.56	1.73	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter		
	Ti	0.00	Centrifuge, vol %		
	Ag	-0.06	Tube deposits: Below oil level		
	Steel	0.00	At and above oil level		
	Cu	0.24	None		
Metal discoloration, deposits, pitting, or etching:	Mg	0.02	M var		
			Breakpoint Data		
	Al	Pink	Neut. no. 26 days		
	Ti	Purple	100°F vis 26 days		
	Ag	Pink blue	Test Conditions		
	Steel	Blue-green	Sample temperature, °F 347		
	Cu	L. pitting	Sample volume, ml 200		
	Mg	Brown-green orange	Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 277-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-9 AT 347°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.02		3.50	3.57	
7 days	14.61	4.2	3.57	2.96	
14 days	14.91	6.3	3.63	3.21	
21 days	15.27	8.9	3.68	2.89	
26 days	15.50	10.6	3.74	3.12	9
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	0.2
	Ag	-0.02	Tube deposits:	Below oil level	Very L var
	Steel	0.00		At and above oil level	M var
	Cu	-0.39			
	Mg	-0.16			
Metal discoloration, deposits, pitting, or etching:	Al	Pink	Breakpoint Data		
	Ti	Maroon	Neut. no.	26+ days	
	Ag	Pink-blue		100°F vis	26+ days
	Steel	L green	Test Conditions		
	Cu	L etching	Sample temperature, °F	347	
	Mg	L pink		Sample volume, ml	200
		Air rate, liter/hr		10	
		Condensate return		Yes	

TEST NO. 277-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-9 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.90	-	3.34	0.06	
7 days	15.12	8.8	3.54	0.64	
14 days	15.49	11.4	3.58	0.77	
21 days	15.74	13.2	3.63	0.81	
26 days	15.72	13.1	3.63	0.85	8

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200 mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	-0.14	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.04			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L tan	Neut. no.	26+ days	
	Ag	L yellow		100°F vis	26+ days
	Steel	Blue	Test Conditions		
	Cu	Bright orange	Sample temperature, °F	347	
	Mg	No change		Sample volume, ml	200
		Air rate, liter/hr		10	
		Condensate return		Yes	

TEST NO. 277-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87		3.69	0.04	
7 days	15.26	2.6	3.76	0.88	
14 days	15.23	2.4	3.74	1.25	
21 days	15.38	3.4	3.76	1.47	
26 days	15.62	5.0	3.78	1.55	14
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-0.06	Tube deposits:	Below oil level	L var
	Steel	+0.02		At and above oil level	M var
	Cu	-0.16			
	Mg	+0.10			
Metal discoloration, deposits, pitting, or etching:	Al	Pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	Pink-blue	100°F vis	26+ days	
	Steel	L green	Test Conditions		
	Cu	Brown	Sample temperature, °F	347	
	Mg	L gray	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 277-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-11 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26		3.21	0.05	
7 days	14.37	8.4	3.33	0.67	
14 days	14.73	11.1	3.45	0.82	
21 days	14.97	12.9	3.46	0.83	
26 days	15.01	13.2	3.46	0.85	3

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.10	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	-0.08			
	Mg	+0.59			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no.	26+ days	
			100°F vis	26+ days	
			Test Conditions		
			Sample temperature, °F	347	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 280-1 RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5		12.88	0.00	
72 hr	6702	1790	53.59	1.13	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level None At and above oil level H var & carbon		
			Test Conditions		
Metal discoloration, deposits pitting, or etching:			Sample temperature, °F 608		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 280-2 RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
72 hr	426.7	19.3	14.32	0.03	
120 hr	466.2	30.4	14.47	0.13	
168 hr	514.7	43.9	15.34	0.13	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % none		
			Tube deposits: Below oil level None At and above oil level L var		
			Test Conditions		
Metal discoloration, deposits pitting, or etching:			Sample temperature, °F 608		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 280-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-64-20 AT 608°F

	Vis., cs/100°F	100°F Vis. Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22		4.07	0.00	
72 hr	31.36	29.8	4.73	0.07	
120 hr	35.65	47.2	5.05	0.10	
168 hr	40.79	68.4	5.50	0.13	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.12	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	0.4
	Ag	-4.26	Tube deposits:	Below oil level	M var
	Steel	+0.04		At and above oil level	M var
	Cu	-23.5			
	Mg	+0.75			
Metal discoloration, deposits pitting, or etching:			Test Conditions		
	Al	1 yellow	Sample temperature, °F		608
	Ti	Blue-tan	Sample volume, ml		200
	Ag	M etching & brown coating	Air rate, liter/hr		10
	Steel	Purple-brown	Condensate return		Yes
	Cu	M etching & pitting			
	Mg	Dark gray coating			

TEST NO. 280-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis., cs/100°F	100°F Vis. Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5		12.88	0.00	
72 hr	4700	1226	44.48	0.33	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	
	Ti	+0.06		Centrifuge, vol %	
	Ag	+0.28	Tube deposits:	Below oil level	None
	Steel	+0.18		At and above oil level	H var & carbon
	Cu	+1.95			
	Mg				
Metal discoloration, deposits pitting, or etching:			Test Conditions		
	Al	1 brown-yellow	Sample temperature, °F		608
	Ti	Blue	Sample volume, ml		200
	Ag	Very 1. brown coating	Air rate, liter/hr		10
	Steel	Charcoal deposits	Condensate return		Yes
	Cu	Black coating			
	Mg				

TEST NO. 280-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
72 hr	426.1	19.2	14.04	0.10	
120 hr	464.6	29.9	14.48	0.16	
168 hr	513.8	43.7	15.27	0.18	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.08	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L var
	Cu	-0.41			
	Mg	—			
Metal discoloration, deposits pitting, or etching:			Test Conditions		
	Al	L yellow	Sample temperature, °F		608
	Ti	L yellow-brown	Sample volume, ml		200
	Ag	L yellow	Air rate, liter/hr		10
	Steel	Pale blue-gray	Condensate return		Yes
	Cu	L etching			
	Mg	—			

TEST NO. 280-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	—	4.07	0.00	
72 hr	30.93	27.7	4.67	0.10	
120 hr	37.64	55.4	5.19	0.15	
168 hr	48.39	99.8	5.91	0.16	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.12	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-6.33	Tube deposits:	Below oil level	M var
	Steel	+0.08		At and above oil level	M var
	Cu	-1.87			
	Mg	—			
Metal discoloration, deposits pitting, or etching:			Test Conditions		
	Al	L brown-yellow	Sample temperature, °F		608
	Ti	Yellow-blue	Sample volume, ml		200
	Ag	M etching & brown coating	Air rate, liter/hr		10
	Steel	Purple-brown	Condensate return		Yes
	Cu	M etching & pitting			
	Mg	—			

TEST NO. 281-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.66	-	4.65	0.26	24
7 days	17.60	-0.3	4.56	1.48	
14 days	16.97	-3.9	4.48	2.26	
21 days	29.46	+66.8	6.08	38.6	
26 days	-	-	-	50.5	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.06	Sludge in oil: 200-mesh filter		-
	Ti	+0.06	Centrifuge, vol %		-
	Ag	+0.04	Tube deposits: Below oil level		H carbon & var
	Steel	+0.04	At and above oil level		H carbon & var
	Cu	-2.56	Breakpoint Data		
	Mg	-0.77			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow-L brown	Neut. no. 17 days		
	Ti	Yellow-brown	100°F vis 14 days		
	Ag	Yellow-L brown	Test Conditions		
	Steel	Purple-brown			
	Cu	H etching	Sample temperature, °F		347
	Mg	Large pits	Sample volume, ml		200
			Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 283-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	-	4.67	0.25	24
7 days	17.51	-1.2	4.56	1.60	
14 days	15.80	-10.8	4.06	4.99	
21 days	-	-	-	46.8	
26 days	-	-	-	48.3	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.08	Sludge in oil: 200-mesh filter		
	Ti	+0.06	Centrifuge, vol %		
	Ag	+0.10	Tube deposits: Below oil level		
	Steel	+0.02	At and above oil level		
	Cu	-4.99	H carbon & var		
	Mg	-0.97	H carbon & var		
Metal discoloration, deposits, pitting, or etching:	Al	Yellow-L brown	Breakpoint Data		
	Ti	Yellow-brown	Neut. no. 5 days		
	Ag	Yellow-L brown	100°F vis 14 days		
	Steel	Purple-brown	Test Conditions		
	Cu	H etching	Sample temperature, °F 347		
	Mg	Large pits	Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 283-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87	—	3.69	0.04	
7 days	15.28	2.8	3.71	1.05	
14 days	15.42	3.7	3.69	1.28	
21 days	15.54	4.5	3.76	1.44	
26 days	15.60	4.9	3.76	1.39	12
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			H var M var		
			Breakpoint Data		
			Neut. no. 26+ days 100°F vis 26+ days		
			Test Conditions		
			Sample temperature, °F 347 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 283-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-769 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.04	—	3.75	0.04	
7 days	15.16	0.8	3.76	1.04	
14 days	15.16	0.8	3.73	1.27	
21 days	15.28	1.6	3.74	1.41	
26 days	15.36	2.1	3.76	1.54	9
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			Very L var M var		
			Breakpoint Data		
			Neut. no. 26+ days 100°F vis 26+ days		
			Test Conditions		
			Sample temperature, °F 347 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 283-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-770 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.93		3.75	0.04	
7 days	15.22	1.3	3.78	1.00	
14 days	15.49	3.1	3.74	1.26	
21 days	15.65	4.1	3.79	1.34	
26 days	15.67	4.3	3.81	1.35	12
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	Trace
	Ag	-0.02	Tube deposits:	Below oil level	Very L var
	Steel	0.00		At and above oil level	M var
	Cu	-0.10			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:	Al	Pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	Brown-blue	100°F vis	26+ days	
	Steel	Pale green	Test Conditions		
	Cu	Brown	Sample temperature, °F	347	
	Mg	L gray	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 283-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-771 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.01		3.74	0.04	
7 days	15.18	1.1	3.77	1.08	
14 days	15.03	0.1	3.71	1.28	
21 days	15.21	1.3	3.69	1.42	
26 days	15.26	1.7	3.75	1.45	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.06		Centrifuge, vol %	Trace
	Ag	-0.04	Tube deposits:	Below oil level	Very H var
	Steel	0.00		At and above oil level	M var
	Cu	-0.10			
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:	Al	Pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	Brown-blue	100°F vis	26+ days	
	Steel	Pale green	Test Conditions		
	Cu	Brown	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 284-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	27.50	—	5.08	0.07	5	
16 hr	31.81	15.7	5.55	0.95		
24 hr	32.78	19.2	5.67	1.19		
40 hr	34.94	27.1	5.96	2.32		
48 hr	37.83	37.6	5.99	4.54		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	-0.62	Sludge in oil:		200-mesh filter	None
	Ti	0.00			Centrifuge, vol %	None
	Ag	-0.04	Tube deposits:		Below oil level	None
	Steel	0.00			At and above oil level	H var
	Cu	-0.10				
	Mg	—				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions			
	Ti	Very L brown	Sample temperature, °F		428	
	Ag	L yellow	Sample volume, ml		200	
	Steel	Green-blue	Air rate, liter/hr		10	
	Cu	Orange-yellow	Condensate return		Yes	
	Mg	—				

TEST NO. 284-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-36 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.33	—	5.31	0.14	4
16 hr	31.80	12.2	5.74	0.95	
24 hr	32.52	14.8	5.84	1.11	
40 hr	33.97	19.9	6.02	1.58	
48 hr	35.08	23.8	6.15	2.80	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		None
Al			Centrifuge, vol %		None
Ti					
Ag					
Steel			Tube deposits: Below oil level		None
Cu			At and above oil level		H var
Mg					
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
Al			Sample temperature, °F		428
Ti			Sample volume, ml		200
Ag			Air rate, liter/hr		10
Steel			Condensate return		Yes
Cu					
Mg					

TEST NO. 284-3 RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-4 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Nett. No., mg KOH/g	Oil Loss, wt %
Initial	29.19	-	5.41	0.10	
16 hr	32.45	11.2	5.67	0.93	
24 hr	33.50	14.8	5.87	1.31	
40 hr	38.94	33.4	6.44	4.47	
48 hr	42.49	45.6	6.83	7.46	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: below oil level At and above oil level		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching:			Sample temperature, °F		
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 290-1 RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-61-17 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Nett. No., mg KOH/g	Oil Loss, wt %
Initial	15.69	-	3.57	0.04	
16 hr	17.66	12.6	3.85	0.84	
24 hr	17.96	14.5	3.91	1.12	
40 hr	18.95	20.8	4.05	2.11	
48 hr	19.92	27.0	4.21	5.19	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level At and above oil level		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching:			Sample temperature, °F		
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 290-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-25 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.59	-	3.51	0.06	7
16 hr	17.03	9.2	3.74	1.14	
24 hr	18.34	17.6	3.82	2.58	
40 hr	22.39	43.6	4.49	9.03	
48 hr	24.89	59.7	4.85	11.61	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-0.06	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-1.38			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	L yellow-brown	Sample temperature, °F	428	
	Ag	L yellow	Sample volume, ml	200	
	Steel	Brown-blue	Air rate, liter/hr	10	
	Cu	M etching	Condensate return	Yes	
	Mg	-			

TEST NO. 290-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-33 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	18.12	—	4.09	0.14	7	
16 hr	18.97	4.7	4.08	2.21		
24 hr	19.97	10.2	4.21	2.54		
40 hr	22.31	23.1	4.53	3.48		
48 hr	24.60	35.8	4.84	7.52		
Metal Specimen Data				Test Cell Data		
Weight change, mg/cm ² :		Al	+0.02	Sludge in oil:	200-mesh filter	Trace
		Ti	+0.02		Centrifuge, vol %	None
		Ag	+0.04	Tube deposits:	Below oil level At and above oil level	None None
		Steel	0.00			
		Cu	-19.2			
		Mg	—			
Metal discoloration, deposits, pitting, or etching:		Al	No change	Test Conditions		
		Ti	L yellow-brown			
		Ag	White			
		Steel	Pale green-blue			
		Cu	M etching			
		Mg	—			
		Sample temperature, °F	428			
		Sample volume, ml	200			
		Air rate, liter/hr	10			
		Condensate return	Yes			

TEST NO. 290-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-401 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	26.30	—	5.13	0.11	
16 hr	33.45	27.2	6.04	1.95	
24 hr	37.22	41.5	6.48	2.36	
40 hr	46.62	77.3	7.57	3.03	
48 hr	53.18	102	8.29	5.02	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			428		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 290-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-402 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	46.84	—	8.25	0.12	
16 hr	53.12	13.4	8.74	1.56	
24 hr	57.50	22.8	9.20	2.24	
40 hr	69.34	48.0	10.45	2.81	
48 hr	76.30	62.9	11.17	4.26	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			428		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 291-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-4 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	29.19		5.41	0.10	
16 hr	31.00	6.2	5.61	0.40	
24 hr	31.51	7.9	5.67	0.44	
40 hr	32.27	10.6	5.76	0.51	
48 hr	32.56	11.5	5.69	0.53	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % None		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 291-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.38		3.32	0.03	
16 hr	14.01	4.7	3.41	0.20	
24 hr	14.27	6.7	3.44	0.36	
40 hr	14.66	9.6	3.52	0.77	
48 hr	14.72	10.0	3.55	1.11	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % Trace		
			Tube deposits: Below oil level None		
			At and above oil level 1 var		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 291-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-8 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.24	-	3.26	0.23	
16 hr	14.25	7.6	3.44	1.02	
24 hr	14.41	8.8	3.47	1.19	
40 hr	14.71	11.0	3.52	1.39	
48 hr	14.81	11.9	3.53	1.50	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 291-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-13 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.47	-	3.22	0.10	
16 hr	13.98	3.8	3.33	0.22	
24 hr	14.27	5.9	3.37	0.34	
40 hr	14.68	9.0	3.42	0.50	
48 hr	14.77	9.7	3.45	0.59	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			None		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 291-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-769 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.04	-	3.75	0.04	3
16 hr	14.98	-0.4	3.69	0.68	
24 hr	14.98	-0.4	3.71	0.85	
40 hr	14.99	-0.3	3.68	1.08	
48 hr	14.93	-0.7	3.67	1.20	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-0.10			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Breakpoint Data		
	Ti	Brown	Neut. no.	45+ hr	
	Ag	Yellow	100°F vis	48+ hr	
	Steel	Blue	Test Conditions		
	Cu	Peacock	Sample temperature, °F	385	
	Mg	L yellow	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 291-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-770 AT 385°F

	Vis, cs/100°F	100°F Vis increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.03	—	3.75	0.04	1
16 hr	14.88	-1.0	3.70	0.75	
24 hr	14.99	-0.3	3.71	0.91	
40 hr	14.85	-1.2	3.68	1.10	
48 hr	14.84	-1.3	3.66	1.26	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-0.10			
	Mg	+0.02			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Breakpoint Data		
	Ti	Brown	Neut. no.	48+ hr	
	Ag	Yellow	100°F vis	48+ hr	
	Steel	Blue	Test Conditions		
	Cu	Peacock	Sample temperature, °F	385	
	Mg	L yellow	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 291-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-771 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.01	—	3.74	0.04	
16 hr	15.08	+0.5	3.73	0.70	
24 hr	15.02	+0.1	3.72	0.79	
40 hr	14.97	+0.3	3.64	1.03	
48 hr	14.94	-0.5	3.67	1.23	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-0.10			
	Mg	+0.04	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Neut. no.	48+ hr	
	Ti	Brown		100°F vis	48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	Pink-brown		Sample volume, ml	200
	Mg	L yellow		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 293-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.13	—	3.17	0.19	
7 days	12.72	4.9	3.28	1.21	
14 days	12.74	5.0	3.29	1.82	
21 days	12.82	5.7	3.30	2.23	
26 days	12.78	5.4	3.29	2.29	13
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+3.85	Sludge in oil:	200-mesh filter	Trace
	Ti	+2.35		Centrifuge, vol %	Trace
	Ag	+1.74	Tube deposits:	Below oil level	H var
	Steel	+2.31		At and above oil level	M var
	Cu	+0.24			
	Mg	+2.23	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	Brown-black deposit	Neut. no.	26+ days	
	Ti	Brown-black deposit		100°F vis	26+ days
	Ag	Brown-black deposit	Test Conditions		
	Steel	Brown-black deposit	Sample temperature, °F	347	
	Cu	Black-orange deposit		Sample volume, ml	200
	Mg	Brown-black deposit		Air rate, liter/hr	10
				Condensate return	Yes

TEST NO. 293-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-12 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.79	-	3.52	0.25	
7 days	14.68	6.4	3.68	1.46	
14 days	14.58	5.7	3.67	2.13	
21 days	14.62	6.0	3.68	2.55	
26 days	14.60	5.9	3.65	2.78	9
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+3.06	Sludge in oil: 200-mesh filter Centrifuge, vol % Trace Trace		
	Ti	+1.79			
	Ag	+1.16	Tube deposits: Below oil level H var At and above oil level M var		
	Steel	+1.68			
	Cu	+0.30			
	Mg	+1.85			
Metal discoloration, deposits, pitting, or etching:	Al	Brown-black deposit	Breakpoint Data		
	Ti	Brown-black deposit	Neut. no. 26+ days 100°F vis 26+ days		
	Ag	Brown-black deposit			
	Steel	Brown-black deposit	Test Conditions		
	Cu	Brown-black deposit, 1 pitting	Sample temperature, °F 347 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Mg	Brown-black deposit			

TEST NO. 293-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-18 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss wt %
Initial	16.84	-	4.29	0.11	
7 days	17.31	2.8	4.35	1.76	
14 days	17.08	1.4	4.26	3.23	
21 days	16.94	0.6	4.19	5.05	
26 days	17.08	1.4	4.22	5.45	13
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.08	Sludge in oil: 200-mesh filter Centrifuge, vol % None Trace		
	Ti	0.00			
	Ag	-0.14	Tube deposits: Below oil level 1 var At and above oil level H var		
	Steel	+0.06			
	Cu	0.00			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Breakpoint Data		
	Ti	Yellow	Neut. no. 14 days 100°F vis 26+ days		
	Ag	Yellow			
	Steel	Brown-yellow	Test Conditions		
	Cu	Black-orange	Sample temperature, °F 347 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Mg	Yellow-tan			

TEST NO. 293-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-11 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.41	—	4.30	0.16	27
7 days	15.93	-2.9	4.18	0.28	
14 days	45.77	+179	7.58	37.3	
21 days	161.2	+982	17.33	53.6	
26 days	solid	—		—	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	—
	Ti	+0.02		Centrifuge, vol %	—
	Ag	-0.10	Tube deposits:	Below oil level	L var
	Steel	+0.02		At and above oil level	M var
	Cu	-1.54			
	Mg	-11.5			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow-tan	Breakpoint Data		
	Ti	Yellow-brown	Neut. no.	10 days	
	Ag	L yellow		100°F vis	16 days
	Steel	Green-purple blue	Test Conditions		
	Cu	L etching & pitting	Sample temperature, °F	347	
	Mg	H pitting	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 293-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-769 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.04	—	3.75	0.04	
7 days	15.28	1.6	3.77	0.79	
14 days	15.35	2.1	3.76	1.20	
21 days	15.60	3.7	3.82	1.68	
26 days	15.66	4.1	3.80	1.54	13
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.04		Centrifuge, vol %	Trace
	Ag	-0.06	Tube deposits:	Below oil level	L v. .
	Steel	0.00		At and above oil level	L var
	Cu	-0.20			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching:	Al	Pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	Purple	100°F vis	26+ days	
	Steel	Blue-green	Test Conditions		
	Cu	Very L etching	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 293-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON K-1054^(a) AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.29	—	4.18	0.16	
7 days	16.24	-0.3	4.11	1.26	
14 days	15.98	-1.9	4.02	1.93	
21 days	15.74	-3.4	3.92	3.35	
26 days	16.23	-0.4	3.91	9.39	9
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	+0.04	Tube deposits:	Below oil level	L var
	Steel	-0.04		At and above oil level	M var
	Cu	-0.34			
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:	Al	Pale blue	Breakpoint Data		
	Ti	Pale green	Neut. no.	19 days	
	Ag	Yellow	100°F vis	26 days	
	Steel	L green	Test Conditions		
	Cu	L etching	Sample temperature, °F	347	
	Mg	L yellow-green	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	
(a) Blend (1:1) of O-65-19 and O-65-21.					

TEST NO. 294-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.50	—	5.08	0.07	
7 days	31.22	13.5	5.51	0.30	
14 days	32.10	16.7	5.62	0.33	
21 days	32.74	19.1	5.69	0.42	
26 days	32.93	19.7	5.71	0.42	10

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	-0.08	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.04			
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	26+ days	
	Ag	L yellow	100°F vis	26+ days	
	Steel	Green-blue	Test Conditions		
	Cu	Yellow-orange-purple	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 294-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-7 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.34	—	4.58	0.26	
7 days	16.95	-2.2	4.46	1.13	
14 days	16.27	-6.2	4.27	1.93	
21 days	19.45	+12.2	4.49	25.0	
26 days	(a)	—	—	—	19
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	—
	Ti	0.00		Centrifuge, vol %	—
	Ag	-0.02	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	H var
	Cu	-2.58			
	Mg	-0.59			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Breakpoint Data		
	Ti	Yellow	Neut. no.	14 days	
	Ag	Yellow		100°F vis	16 days
	Steel	Brown-purple	Test Conditions		
	Cu	H etching	Sample temperature, °F	347	
	Mg	Yellow-brown		Sample volume, ml	200
			Air rate, liter/hr	10	
			Condensate return	Yes	
(a) Sample solidified at 26 days.					

TEST NO. 294-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-8 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.24	—	3.26	0.23	11
7 days	14.77	11.6	3.53	1.22	
14 days	15.16	14.5	3.61	1.46	
21 days	15.49	17.0	3.67	1.82	
26 days	15.56	17.5	3.68	1.84	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	—
	Ag	-0.10	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.57			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	26+ days	
	Ag	L yellow		100°F vis	26+ days
	Steel	Blue	Test Conditions		
	Cu	L etching	Sample temperature, °F	347	
	Mg	L yellow	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 294-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-11 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26		3.21	0.05	
7 days	14.42	8.7	3.41	0.62	
14 days	14.81	11.7	3.68	0.71	
21 days	15.13	14.1	3.51	0.83	
26 days	15.17	14.4	3.53	0.90	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol %		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 26+ days		
			100°F vis 26+ days		
			Test Conditions		
			Sample temperature, °F 347		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 294-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-13 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.47		3.22	0.10	
7 days	14.84	10.2	3.46	0.30	
14 days	15.36	14.0	3.57	0.19	
21 days	16.44	22.0	3.71	0.47	
26 days	17.00	26.2	3.80	0.55	14
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol %		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 26+ days		
			100°F vis 26+ days		
			Test Conditions		
			Sample temperature, °F 347		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 294-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-20 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., rag KOH/g	Oil Loss, wt %
Initial	13.48	—	3.25	0.21	10
7 days	14.80	9.8	3.49	0.47	
14 days	15.27	13.3	3.56	0.49	
21 days	15.64	16.0	3.62	0.49	
26 days	15.86	17.7	3.65	0.56	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	—
	Ag	-0.10	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.47			
	Mg	-0.04			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L brown-purple	Neut. no.	26+ days	
	Ag	L brown	100°F vis	26+ days	
	Steel	Blue-green-purple	Test Conditions		
	Cu	L etching	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 295-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.49	-	3.21	0.12	2
16 hr	12.90	3.3	3.28	0.68	
24 hr	13.08	4.7	3.32	1.13	
40 hr	13.32	6.6	3.35	2.06	
48 hr	13.43	7.5	3.38	2.30	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	L var
	Cu	+0.02			
	Mg	+0.08	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	48+ hr	
	Ti	L brown		100°F vis	48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Blue-green-purple	Sample temperature, °F	385	
	Cu	Orange	Sample volume, ml	200	
	Mg	No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 295-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-20 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.48	—	3.25	0.21	
16 hr	14.26	5.8	3.38	0.39	
24 hr	14.48	7.4	3.41	0.53	
40 hr	14.67	8.8	3.44	0.73	
48 hr	14.76	9.5	3.46	0.85	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	-0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.06		At and above oil level	L var
	Cu	-0.06			
	Mg	+0.02			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	48+ hr	
	Ag	L tan	100°F vis	48+ hr	
	Steel	Blue-green	Test Conditions		
	Cu	Brown-orange	Sample temperature, °F	385	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 295-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-21 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.92	—	3.15	0.14	
16 hr	13.59	5.2	3.25	0.35	
24 hr	13.82	7.0	3.29	0.54	
40 hr	14.05	8.7	3.33	0.84	
48 hr	14.10	9.1	3.35	0.92	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	0.00			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	48+ hr	
	Ag	No change	100°F vis	48+ hr	
	Steel	Blue-purple	Test Conditions		
	Cu	Yellow-orange	Sample temperature, °F	385	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 295-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON L-1129^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.96	-	3.74	0.05	
16 hr	14.95	-0.1	3.71	0.70	
24 hr	15.00	+0.3	3.72	0.80	
40 hr	14.85	-0.7	3.68	1.12	
48 hr	14.80	-1.1	3.66	1.28	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	M var
	Cu	-0.14			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
Al	Ti	L yellow	Neut. no.	48+ hr	
	Ag	Brown	100°F vis	48+ hr	
	Steel	Yellow-brown	Test Conditions		
	Cu	Blue	Sample temperature, °F	385	
	Mg	Brown-purple	Sample volume, ml	200	
		L yellow	Air rate, liter/hr	10	
			Condensate return	Yes	
(a) Blend (1:1) of ATL-769 and ATL-771.					

TEST NO. 295-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON L-1136^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.05	-	4.13	0.17	
16 hr	15.92	-0.8	4.05	0.79	
24 hr	15.78	-1.7	4.03	0.89	
40 hr	15.47	-3.6	3.94	1.40	
48 hr	15.15	-5.6	3.84	2.04	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	M var
	Cu	-0.08			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
Al	Ti	L yellow	Neut. no.	47 hr	
	Ag	Brown	100°F vis	48+ hr	
	Steel	Yellow	Test Conditions		
	Cu	Blue	Sample temperature, °F	385	
	Mg	Brown-purple	Sample volume, ml	200	
		L gray	Air rate, liter/hr	10	
			Condensate return	Yes	
(a) Blend (1:1) of O-67-7 and O-67-9.					

TEST NO. 296-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.12	—	3.19	0.20	
24 hr	13.03	7.5	3.37	1.74	
40 hr	13.01	7.3	3.33	2.54	
48 hr	13.10	8.1	3.34	3.11	
64 hr	15.74	29.9	3.74	15.73	
72 hr	18.14	49.7	4.10	21.6	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al +0.83 Ti +0.37 Ag +0.32 Steel +0.34 Cu -0.39 Mg +0.32 Metal discoloration, deposits, pitting, or etching: Al Dark brown deposit Ti Dark brown deposit Ag Dark brown deposit Steel Dark brown deposit Cu L pitting Mg Dark brown deposit M pitting			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % Trace Tube deposits: Below oil level H var At and above oil level M var		
			Breakpoint Data		
			Neut. no. 53 hr 100°F vis 54 hr		
			Test Conditions		
			Sample temperature, °F 392 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 296-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-12 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.79	—	3.52	0.25	
24 hr	14.54	5.4	3.77	1.95	
40 hr	14.69	6.5	3.68	2.52	
48 hr	14.95	8.4	3.73	2.83	
64 hr	14.95	8.4	3.72	4.07	
72 hr	15.30	10.9	3.76	7.56	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al +0.61 Ti +0.37 Ag +0.26 Steel +0.30 Cu -0.14 Mg +0.36 Metal discoloration, deposits, pitting, or etching: Al Dark brown deposit Ti Dark brown deposit Ag Dark brown deposit Steel Dark brown deposit Cu Black-orange Mg Dark brown deposit			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % 0.2 Tube deposits: Below oil level M var At and above oil level M carbon		
			Breakpoint Data		
			Neut. no. 60 hr 100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 392 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 296-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-18 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.84	-	4.29	0.11	
24 hr	16.96	+0.7	4.24	2.04	
40 hr	16.54	-1.8	4.07	6.63	
48 hr	17.65	+4.8	4.22	11.66	
64 hr	21.54	+27.9	4.80	19.95	
72 hr	24.56	+45.8	5.36	23.4	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			Trace		
			Tube deposits: Below oil level		
			At and above oil level		
			L var		
			M var		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no. 18 hr		
			100°F vis 43 hr		
			Test Conditions		
			Sample temperature, °F 392		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 296-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71	-	4.67	0.24	
24 hr	16.87	-4.7	4.38	1.80	
40 hr	16.89	-4.6	4.06	12.02	
48 hr	18.47	+4.3	4.32	16.73	
64 hr	50.68	+186	8.27	22.9	
72 hr	273.6	+1445	43.78	24.4	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			Trace		
			Trace		
			Tube deposits: Below oil level		
			At and above oil level		
			M var		
			M var		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no. 30 hr		
			100°F vis 41 hr		
			Test Conditions		
			Sample temperature, °F 392		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 296-J. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	—	4.67	0.25	
24 hr	16.74	-5.5	4.33	1.85	
40 hr	15.71	-11.3	3.99	6.89	
48 hr	16.22	-8.5	3.98	11.44	
64 hr	18.54	+4.6	4.45	18.65	
72 hr	23.33	+31.7	5.47	19.89	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	L var
	Steel	+0.02		At and above oil level	M var
	Cu	-13.3			
	Mg	-1.12	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no. 28 hr		
	Ti	Pale blue	100°F vis 56 hr		
	Ag	L yellow	Test Conditions		
	Steel	Brown-blue-green	Sample temperature, °F 392		
	Cu	M etching	Sample volume, ml 200		
	Mg	M etching	Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 297-L. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11	—	3.76	0.07	
24 hr	15.25	+0.9	3.75	1.49	
40 hr	15.12	+0.1	3.69	1.93	
48 hr	14.98	-0.9	3.63	2.41	
64 hr	17.57	+16.3	3.97	11.11	
72 hr	19.72	+30.5	4.29	16.22	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	M var
	Steel	+0.02		At and above oil level	L var
	Cu	-0.22			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no. 49 hr		
	Ti	Blue-purple	100°F vis 54 hr		
	Ag	Yellow	Test Conditions		
	Steel	Pale green	Sample temperature, °F 392		
	Cu	L etching	Sample volume, ml 200		
	Mg	L yellow	Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 297-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-11 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil loss, wt %
Initial	16.41	—	4.30	0.16	8
24 hr	14.67	-10.6	3.78	1.22	
40 hr	17.18	+4.7	4.01	10.45	
48 hr	19.13	+16.6	4.31	14.10	
64 hr	23.95	+45.9	4.99	20.0	
72 hr	26.58	+62.0	5.37	23.8	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	L var
	Steel	+0.02		At and above oil level	M var
	Cu	-0.22			
	Mg	-1.99			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	Blue-purple	Neut. no. 100°F vis	24 hr	
	Ag	Yellow		30 hr	
	Steel	Pale green	Test Conditions		
	Cu	L etching	Sample temperature, °F	392	
	Mg	H etching	Sample volume, mi	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 297-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-20 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.48	—	3.25	0.21	3
24 hr	14.53	7.8	3.42	0.69	
40 hr	14.72	9.2	3.45	0.85	
48 hr	14.80	9.8	3.47	0.94	
64 hr	15.07	11.8	3.51	1.20	
72 hr	15.21	12.8	3.53	1.37	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	0.00	Tube deposits:	Below oil level	L var
	Steel	+0.02		At and above oil level	L var
	Cu	-0.02			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	Brown	Neut. no. 100°F vis	72+ hr	72+ hr
	Ag	L yellow			
	Steel	Blue	Test Conditions		
	Cu	Brown	Sample temperature, °F	392	
	Mg	No change	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 297-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON K-1054^(a) AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.29	..	4.18	0.16	
24 hr	15.93	-2.2	4.05	1.59	
40 hr	15.37	-5.6	3.84	3.03	
48 hr	15.69	-3.7	3.85	8.39	
64 hr	18.89	+16.0	4.31	17.65	
72 hr	21.04	+29.2	4.65	21.8	6

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	M var
	Cu	-1.08			
	Mg	-0.30			
Metal discoloration, deposits, pitting, or etching:	Al	Pale blue	Breakpoint Data		
	Ti	Blue	Neut. no.	36 hr	
	Ag	Yellow	100°F vis	52 hr	
	Steel	L green	Test Conditions		
	Cu	M etching	Sample temperature, °F	392	
	Mg	M etching	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

(a) Blend (1:1) of O-65-19 and O-65-21.

TEST NO. 298-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-7727 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.67	—	3.30	0.16	
16 hr	14.34	4.9	3.40	0.38	
24 hr	14.48	5.9	3.43	0.46	
40 hr	14.69	7.5	3.47	0.62	
48 hr	14.82	8.4	3.49	0.83	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None Trace		
			Tube deposits: Below oil level At and above oil level		
			None L var		
			Breakpoint Data		
			Neut. no. 48+ hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 300-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	—	4.07	0.0	
16 hr	27.07	11.6	4.37	0.10	
24 hr	27.45	13.3	4.44	0.03	
40 hr	28.48	17.6	4.51	0.04	
48 hr	28.18	16.4	4.51	0.04	2

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.24	Sludge in oil:	200-mesh filter	None
	Ti	+0.12		Centrifuge, vol %	0.3
	Ag	-0.08	Tube deposits:	Below oil level	L var
	Steel	+0.34		At and above oil level	H var
	Cu	-6.08			
	Mg	+0.79			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	L yellow-gray	Sample temperature, °F	608	
	Ti	Gray-brown	Sample volume, ml	200	
	Ag	L brown-white	Air rate, liter/hr	10	
	Steel	Gray deposit	Condensate return	Yes	
	Cu	H etching and pitting			
	Mg	Brown deposit			

TEST NO. 300-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut No., mg KOH/g	Oil Loss, wt %
Initial	24.22	—	4.07	0.00	2
16 hr	27.14	12.1	4.37	0.08	
24 hr	27.62	14.0	4.41	0.02	
40 hr	28.52	17.8	4.46	0.06	
48 hr	28.31	16.9	4.52	0.04	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al	+0.22	Sludge in oil: 200-mesh filter Centrifuge, vol %	Trace 0.4
		Ti	+0.14		
		Ag	-0.08	Tube deposits: Below oil level At and above oil level	L var H var
		Steel	+0.36		
		Cu	-6.37		
Mg					
Metal discoloration, deposits, pitting, or etching:		Al	Brown deposit	Test Conditions	
		Ti	Gray-brown		
		Ag	Brown-white		
		Steel	M etching		
		Cu	M etching & H pitting		
Mg		Sample temperature, °F 608			
		Sample volume, ml 200			
		Air rate, liter/hr 10			
		Condensate return Yes			

TEST NO. 300-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	-	4.07	0.00	6
16 hr	27.17	12.2	4.37	0.10	
24 hr	33.45	38.1	4.84	0.04	
40 hr	34.62	42.9	4.95	0.08	
48 hr	34.49	42.4	4.95	0.07	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.34	Sludge in oil:	200-mesh filter	None
	Ti	+0.16		Centrifuge, vol %	0.4
	Ag	+0.34	Tube deposits:	Below oil level	H var
	Steel	+0.45		At and above oil level	H var
	Cu	-			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	Brown deposit	Test Conditions		
	Ti	Gray-brown	Sample temperature, °F	608	
	Ag	M etching & brown deposit	Sample volume, ml	200	
	Steel	M etching	Air rate, liter/hr	10	
	Cu	-	Condensate return	Yes	
	Mg	-			

TEST NO. 300-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	-	12.88	0.00	3
16 hr	477.0	34.5	14.40	0.08	
24 hr	571.4	61.2	16.10	0.13	
40 hr	973.1	174	20.68	0.29	
48 hr	1308	269	23.87	0.22	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al +0.02	Sludge in oil: 200-mesh filter		None
		Ti -0.02	Centrifuge, vol %		None
		Ag -0.34			
		Steel +0.10	Tube deposits: Below oil level		None
		Cu -1.00	At and above oil level		M var
		Mg +0.02			
Metal discoloration, deposits, pitting, or etching:		Al Yellow	Test Conditions		
		Ti Brown	Sample temperature, °F		608
		Ag Matching	Sample volume, ml		200
		Steel Brown	Air rate, liter/hr		10
		Cu Matching	Condensate return		Yes
		Mg Yellow			

TEST NO. 300-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	-	12.88	0.00	7
16 hr	495.6	39.8	15.09	0.13	
24 hr	686.9	93.8	17.52	0.25	
40 hr	1423	301	24.86	0.40	
48 hr	2131	501	30.23	0.49	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.16	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	-0.37	Tube deposits:	Below oil level	None
	Steel	+0.08		At and above oil level	M var
	Cu	-0.81			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Test Conditions		
	Ti	Brown	Sample temperature, °F	608	
	Ag	L etching	Sample volume, ml	200	
	Steel	Black	Air rate, liter/hr	10	
	Cu	L etching	Condensate return	Yes	
	Mg	-			

TEST NO. 300-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	3
16 hr	461.4	30.1	14.51	0.16	
24 hr	648.8	83.0	17.08	0.31	
40 hr	1950	450	29.04	0.54	
48 hr	4295	1111	40.08	0.63	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.08	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	+0.34	Tube deposits:	Below oil level	None
	Steel	+0.10		At and above oil level	M var
	Cu	—			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:	Al	Yellow	Test Conditions		
	Ti	Blue-purple-yellow	Sample temperature, °F	608	
	Ag	Brown deposit	Sample volume, ml	200	
	Steel	Black	Air rate, liter/hr	10	
	Cu	—	Condensate return	Yes	
	Mg	—			

TEST NO. 300-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	-	13.02	0.01	
16 hr	391.1	9.4	13.52	0.03	
24 hr	396.3	10.8	13.65	0.02	
40 hr	409.5	14.5	13.81	0.03	
48 hr	411.6	15.1	13.90	0.03	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al +0.08 Ti +0.10 Ag -0.12 Steel -0.02 Cu -0.06 Mg 0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None
Metal discoloration, deposits, pitting, or etching:		Al L yellow Ti Brown-yellow Ag Yellow Steel Blue-purple Cu Orange-brown Mg L yellow	Tube deposits: Below oil level At and above oil level		None M var
			Test Conditions		
			Sample temperature, °F		608
			Sample volume, ml		200
			Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 300-8. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	-	13.02	0.01	
16 hr	389.7	9.0	13.53	0.03	
24 hr	396.1	10.8	13.70	0.00	
40 hr	408.2	14.1	13.84	0.02	
48 hr	411.4	15.0	13.91	0.02	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al -0.02 Ti -0.04 Ag -0.10 Steel +0.02 Cu -0.14 Mg -	Sludge in oil: 200-mesh filter Centrifuge, vol %		None None
Metal discoloration, deposits, pitting, or etching:		Al L yellow Ti Brown-yellow Ag Yellow Steel Blue-purple Cu Orange-brown Mg -	Tube deposits: Below oil level At and above oil level		None L var
			Test Conditions		
			Sample temperature, °F		608
			Sample volume, ml		200
			Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 300-9. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	2
16 hr	389.7	9.0	13.55	0.03	
24 hr	396.8	11.0	13.64	0.00	
40 hr	407.9	14.1	13.88	0.02	
48 hr	411.2	15.0	13.92	0.03	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.04		Centrifuge, vol %	None
	Ag	-0.10	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	—			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Brown-yellow	Sample temperature, °F	608	
	Ag	Yellow	Sample volume, ml	200	
	Steel	Blue-purple	Air rate, liter/hr	10	
	Cu	—	Condensate return	Yes	
	Mg	—			

TEST NO. 302-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	—	4.07	0.00	2
16 hr	29.50	21.8	4.61	0.05	
24 hr	31.00	28.0	4.75	0.04	
40 hr	34.19	41.2	5.03	0.03	
48 hr	33.59	38.7	5.01	0.03	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al +0.28 Ti +0.08 Ag -0.36 Steel +0.63 Cu -6.19 Mg +1.01 Metal discoloration, deposits, pitting, or etching: Al Yellow deposit Ti Brown Ag L etching Steel Gray deposit Cu H pitting & L etching Mg Gray deposit			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % 0.4		
			Tube deposits: Below oil level M var At and above oil level L carbon		
			Test Conditions		
			Sample temperature, °F 644		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
Condensate return Yes					

TEST NO. 302-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	--	4.07	0.00	
16 hr	28.95	19.5	4.57	0.03	
24 hr	30.59	26.3	4.71	0.06	
40 hr	33.38	37.8	4.97	0.05	
48 hr	33.54	38.5	5.00	0.03	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			0.4		
			Tube deposits: Below oil level		
			H var		
			At and above oil level		
			L carbon		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			644		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 302-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	--	4.07	0.00	
16 hr	29.04	19.9	4.55	0.05	
24 hr	30.65	26.5	4.69	0.05	
40 hr	33.71	39.2	4.96	0.07	
48 hr	33.90	40.0	4.99	0.07	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			None		
			Centrifuge, vol %		
			0.4		
			Tube deposits: Below oil level		
			H var		
			At and above oil level		
			L carbon		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			644		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 302-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	413.4	15.6	13.87	0.02	
24 hr	431.2	20.6	14.13	0.03	
40 hr	471.3	31.8	14.68	0.03	
48 hr	492.8	37.8	14.97	0.00	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level At and above oil level		
			None L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F 644		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 302-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	411.8	15.2	13.87	0.01	
24 hr	430.5	20.4	14.08	0.02	
40 hr	471.5	31.9	14.68	0.03	
48 hr	491.2	37.4	14.99	0.00	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level At and above oil level		
			None L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F 644		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 302-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	414.9	16.0	13.94	0.04	
24 hr	434.8	21.6	14.18	0.03	
40 hr	481.6	34.7	14.84	0.03	
48 hr	510.2	42.7	15.26	0.06	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
Al			None		
Ti			None		
Ag			Tube deposits: Below oil level		
Steel			At and above oil level		
Cu			None		
Mg			L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
Al			Sample temperature, °F		
Ti			644		
Ag			Sample volume, ml		
Steel			200		
Cu			Air rate, liter/hr		
Mg			10		
			Condensate return		
			Yes		

TEST NO. 303-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ALO-716-P625893 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.50	—	3.61	3.29	
16 hr	14.87	2.6	3.69	3.96	
24 hr	14.97	3.2	3.69	3.70	
40 hr	15.07	3.9	3.73	4.15	
48 hr	15.82	9.1	3.82	8.39	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
Al			Centrifuge, vol %		
Ti			None		
Ag			0.6		
Steel			Tube deposits: Below oil level		
Cu			At and above oil level		
Mg			None		
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
Al			Neut. no.		
Ti			37 hr		
Ag			100°F vis		
Steel			46 hr		
Cu			Test Conditions		
Mg			Sample temperature, °F		
			385		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 303-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ALO-7-7-P628985 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.91	—	3.47	1.57	
16 hr	14.37	3.3	3.53	2.29	
24 hr	14.47	4.0	3.55	2.35	
40 hr	14.62	5.1	3.58	2.57	
48 hr	14.79	6.3	3.61	3.75	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al Ti Ag Steel Cu Mg			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching: Al Ti Ag Steel Cu Mg			Breakpoint Data		
			Neut. no. 46 hr 100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 303-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ALO-718-F622807 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.33	—	3.48	0.68	
16 hr	13.47	1.1	3.50	1.40	
24 hr	13.61	2.1	3.52	1.67	
40 hr	16.12	20.9	3.89	14.35	
48 hr	18.07	35.6	4.21	21.1	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al Ti Ag Steel Cu Mg			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level At and above oil level		
			None		
Metal discoloration, deposits, pitting, or etching: Al Ti Ag Steel Cu Mg			Breakpoint Data		
			Neut. no. 28 hr 100°F vis 30 hr		
			Test Conditions		
			Sample temperature, °F 385 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 304-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 680°F^(a)

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	—	4.07	0.00	5
16 hr	34.36	41.9	5.07	0.02	
24 hr	41.98	73.3	5.62	0.02	
40 hr	57.77	138	6.61	0.04	
48 hr	62.13	156	6.93	0.01	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.18	Sludge in oil: 200-mesh filter		None
	Ti	+0.16	Centrifuge vol %		0.2
	Ag	−0.97	Tube deposits: Below oil level		L var
	Steel	+0.77	At and above oil level		L carbon
	Cu	−5.50			
	Mg	+1.22			
Metal discoloration, depo. its, pitting, or etching:	Al	Green	Test Conditions		
	Ti	Gray	Sample temperature, °F		680
	Ag	M etching	Sample volume, ml		200
	Steel	Gray deposit	Air rate, liter/hr		10
	Cu	H pitting & L etching	Condensate return		Yes
	Mg	Black deposit			
(a) Sample temperature dropped to 670°F at 16 hr and held thereafter due to violent refluxing:					

TEST NO. 304-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 680°F^(a)

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.22	-	4.07	0.00	5
16 hr	33.17	37.0	4.99	0.03	
24 hr	35.97	48.5	5.22	0.03	
40 hr	43.39	79.2	5.76	0.02	
48 hr	45.24	86.8	5.90	0.01	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.24	Sludge in oil: 200-mesh filter Centrifuge, vol %	None	9.2
	Ti	+0.10			
	Ag	-0.75			
	Steel	+0.69			
	Cu	-5.34			
	Mg		Tube deposits: Below oil level At and above oil level	L var L carbon	
Metal discoloration, deposits, pitting, or etching:	Al	Green deposit			Test Conditions
	Ti	Gray	Sample temperature, °F	680	
	Ag	M etching			
	Steel	Gray deposit	Sample volume, ml	200	
	Cu	H pitting & L etching			Air rate, liter/hr
	Mg	-	Condensate return	Yes	
(a) Sample temperature dropped to 670°F at 16 hr and held thereafter due to violent refluxing.					

TEST NO. 304-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 680°F^(a)

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	24.22		4.07	0.00		
16 hr	33.47	38.2	4.90	0.06		
24 hr	36.36	50.1	5.19	0.05		
40 hr	50.38	108	6.16	0.06		
48 hr	54.13	124	6.43	0.03	4	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.28	Sludge in oil:	200-mesh filter	None	
	Ti	+0.12		Centrifuge, vol %		Trace
	Ag	-0.77	Tube deposits:	Below oil level	M var	
	Steel	+0.77		At and above oil level		L carbon
	Cu	—				
	Mg	—				
Metal discoloration, deposits, pitting, or etching:	Al	Gray-green deposit	Test Conditions			
	Ti	Gray	Sample temperature, °F	680		
	Ag	M etching	Sample volume, ml	200		
	Steel	Gray deposit	Air rate, liter/hr	10		
	Cu	—	Condensate return	Yes		
	Mg	—				
(a) Sample temperature dropped to 670°F at 16 hr and held thereafter due to violent refluxing.						

TEST NO. 304-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 680°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	3
16 hr	493.3	38.0	14.92	0.01	
24 hr	589.8	64.9	16.12	0.03	
40 hr	1016	184	20.46	0.08	
48 hr	1438	302	23.67	0.10	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :		Al	- 0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
		Ti	- 0.02		0.2
		Ag	- 0.14	Tube deposits: Below oil level At and above oil level	None
		Steel	+ 0.06		M var
		Cu	- 0.12		
		Mg	0.00	Test Conditions	
Metal discoloration, deposits, pitting, or etching:		Al	No change	Sample temperature, °F	680
		Ti	Yellow	Sample volume, ml	200
		Ag	Yellow	Air rate, liter/hr	10
		Steel	Blue	Condensate return	Yes
		Cu	No change		
		Mg	Red-black		

TEST NC 304-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 680°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	499.9	39.8	15.01	0.01	
24 hr	600.2	67.8	16.21	0.02	
40 hr	1023	186	20.35	0.02	
48 hr	1395	290	23.27	0.09	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.04	Sludge in oil:	200-mesh filter	None
	Ti	-0.06		Centrifuge, vol %	0.3
	Ag	-0.18	Tube deposits:	Below oil level	None
	Steel	+0.10		At and above oil level	M var
	Cu	-0.24			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		680
	Ti	Yellow	Sample volume, ml		200
	Ag	Yellow	Air rate, liter/hr		10
	Steel	Blue	Condensate return		Yes
	Cu	L etching			
	Mg	—			

TEST NO. 304-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 680°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	527.2	47.4	15.39	0.00	
24 hr	704.3	97.0	17.43	0.06	
40 hr	1850	417	26.80	0.16	
48 hr	3896	989	36.13	0.19	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	0.4
	Ag	-0.16	Tube deposits:	Below oil level	L var
	Steel	0.08		At and above oil level	M var
	Cu	—			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		680
	Ti	Yellow	Sample volume, ml		200
	Ag	Yellow	Air rate, liter/hr		10
	Steel	Blue	Condensate return		Yes
	Cu	—			
	Mg	—			

TEST NO. 305-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-14 AT 365°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.71	—	4.67	0.24	
7 days	23.19	30.9	5.05	32.2	
8 days	93.69	429	15.36	34.0	
9 days	312.3	1663	36.48	33.3	13
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter — Centrifuge, vol % —		
			Tube deposits: Below oil level L var At and above oil level H var & L carbon		
			Breakpoint Data		
			Neut. no. <7 days 100°F vis 1 day		
			Test Conditions		
			Sample temperature, °F 365 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 305-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-19 AT 365°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.72	—	4.67	0.25	
7 days	19.31	9.0	4.46	23.0	
8 days	24.82	40.1	5.61	27.0	
9 days	113.3	539	15.45	25.3	
10 days	113.2	539	19.94	22.7	
11 days	81.99	563	17.98	20.4	14
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter — Centrifuge, vol % —		
			Tube deposits: Below oil level L var At and above oil level M & H var		
			Breakpoint Data		
			Neut. no. <7 days 100°F vis 4 days		
			Test Conditions		
			Sample temperature, °F 365 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 305-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-7 AT 365°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.34	—	4.58	0.26	
7 days	19.52	12.6	4.48	23.5	
8 days	31.72	82.9	6.79	32.0	
9 days	333.8	1808	27.81	34.6	
10 days	238.4	1275	29.50	32.4	16

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	—
	Ti	+0.08		Centrifuge, vol %	—
	Ag	-0.10	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	M & H var
	Cu	-0.97			
	Mg	-0.04			
Metal discoloration, deposits, pitting, or etching:	Al	L green	Breakpoint Data		
	Ti	Green	Neut. no.	<7 days	
	Ag	Yellow	100°F vis	4 days	
	Steel	L red	Test Conditions		
	Cu	L pitting & M etching	Sample temperature, °F	365	
	Mg	L tan	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 305-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 365°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87	—	3.69	0.04	
7 days	14.88	0.1	3.63	2.40	
8 days	14.94	0.5	3.66	2.31	
9 days	15.08	1.4	3.69	2.18	
10 days	15.12	1.7	3.67	2.04	
11 days	15.08	1.4	3.69	1.80	
14 days	15.13	1.7	3.68	1.72	5

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	Trace
	Ag	-0.04	Tube deposits:	Below oil level	None
	Steel	-0.02		At and above oil level	M var
	Cu	-0.24			
	Mg	-0.06			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	Blue	Neut. no.	14+ days	
	Ag	L orange	100°F vis	14+ days	
	Steel	Green	Test Conditions		
	Cu	M etching	Sample temperature, °F	365	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 305-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-67-11 AT 365°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26	—	3.21	0.05	
7 days	14.84	11.9	3.47	0.99	
8 days	14.75	11.2	3.46	0.83	
9 days	14.69	10.8	3.45	0.86	
10 days	14.65	10.5	3.44	0.86	
11 days	14.57	9.9	3.45	0.87	
14 days	14.82	11.8	3.47	1.03	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % None		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 14+ days		
			100°F vis 14+ days		
			Test Conditions		
			Sample temperature, °F 365		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 305-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-67-20 AT 365°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.48	—	3.25	0.21	
7 days	15.13	12.2	3.52	0.92	
8 days	15.07	11.8	3.52	0.76	
9 days	15.04	11.6	3.51	0.74	
10 days	15.06	11.7	3.51	0.71	
11 days	14.98	11.1	3.50	0.71	
14 days	15.24	13.1	3.54	0.78	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace		
			Centrifuge, vol % None		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 14+ days		
			100°F vis 14+ days		
			Test Conditions		
			Sample temperature, °F 365		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 306-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	-	12.88	0.00	
16 hr	498.7	40.7	15.06	0.24	
24 hr	674.8	90.4	17.35	0.30	
40 hr	1413	299	24.70	0.48	
48 hr	2167	511	30.32	0.49	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.04		Centrifuge, vol %	None
	Ag	-0.28	Tube deposits:	Below oil level	None
	Steel	+0.16		At and above oil level	M var
	Cu	-0.24			
	Mg	+0.06			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Yellow			
	Ag	L etching	Sample temperature, °F 608		
	Steel	Black	Sample volume, ml 200		
	Cu	L pitting	Air rate, liter/hr 10		
	Mg	L yellow	Condensate return Yes		

TEST NO. 306-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. Mch., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	2
16 hr	481.1	35.7	14.86	0.22	
24 hr	638.2	80.0	16.95	0.83	
40 hr	1261	256	23.80	0.48	
48 hr	1974	457	29.01	0.50	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	-0.06		Centrifuge, vol %	None
	Ag	-0.30	Tube deposits:	Below oil level	None
	Steel	+0.20		At and above oil level	M var
	Cu	+1.08			
	Mg	+0.06			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions		
	Ti	Yellow	Sample temperature, °F	608	
	Ag	L etching	Sample volume, ml	200	
	Steel	Black deposit	Air rate, liter/hr	10	
	Cu	L pitting & gray deposit	Condensate return	Yes	
	Mg	L yellow			

TEST NO. 306-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	389.0	8.8	13.53	0.03	
24 hr	395.5	10.6	13.64	0.00	
40 hr	408.7	14.3	13.82	0.00	
48 hr	415.4	16.2	13.92	0.03	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			L var:		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			608		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 306-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	390.0	9.1	13.48	0.02	
24 hr	396.8	11.0	13.60	0.11	
40 hr	409.8	14.6	13.70	0.00	
48 hr	415.8	16.3	13.90	0.04	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			L var:		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			608		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 307-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-19 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	12.49	—	3.21	0.12	3	
16 hr	12.95	3.7	3.29	0.85		
24 hr	13.11	5.0	3.32	1.37		
40 hr	13.34	6.8	3.37	2.08		
48 hr	13.47	7.8	3.40	2.56		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	+0.04		Tube deposits:	Below oil level At and above oil level	None L var
	Steel	-0.04				
	Cu	+1.44				
	Mg	+0.04				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data			
	Ti	No change	Neut. no.	48+ hr		
	Ag	L yellow	100°F vis	48+ hr		
	Steel	Yellow-green	Test Conditions			
	Cu	Orange deposit	Sample temperature, °F	385		
Mg	No change	Sample volume, ml	200			
		Air rate, liter/hr	10			
		Condensate return	Yes			

TEST NO. 307-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-20 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.48	-	3.25	0.21	
16 hr	14.28	5.9	3.37	0.42	
24 hr	14.43	7.0	3.40	0.56	
40 hr	14.63	8.5	3.44	0.80	
48 hr	14.73	9.3	3.46	0.91	2

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	None
	Ti	+0.06		Centrifuge, vol %	None
	Ag	+0.04	Tube deposits:	Below oil level	None
	Steel	-0.04		At and above oil level	L var
	Cu	+1.50			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching.	Al	No change	Breakpoint Data		
	Ti	L tan	Neut. no.	48+ hr	
	Ag	L brown	100°F vis	48+ hr	
	Steel	Blue	Test Conditions		
	Cu	Tan deposit	Sample temperature, °F	385	
	Mg	No change	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 307-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-24 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.04	—	3.47	0.24	
16 hr	13.18	1.1	3.44	1.46	
24 hr	13.22	1.4	3.43	1.54	
40 hr	13.22	1.4	3.44	2.19	
48 hr	13.28	1.8	3.45	2.50	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.06	Sludge in oil: 200-mesh filter		None
	Ti	+0.04	Centrifuge, vol %		None
	Ag	0.00	Tube deposits: Below oil level		None
	Steel	+3.23	At and above oil level		None
	Cu	+1.76			
	Mg	+0.02			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
	Al	No change	Neut. no.	48+ hr	
	Ti	No change	100°F vis	48+ hr	
	Ag	L brown			
	Steel	L tan deposit			
	Cu	Black deposit			
	Mg	No change			
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 307-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-68-1 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.29	—	3.21	0.00	
16 hr	13.81	3.9	3.30	0.21	
24 hr	14.06	5.8	3.34	0.39	
40 hr	14.25	7.2	3.37	0.66	
48 hr	14.38	8.2	3.39	0.79	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.08	Sludge in oil: 200-mesh filter		None
	Ti	+0.06	Centrifuge, vol %		None
	Ag	-0.02	Tube deposits: Below oil level		None
	Steel	+2.82	At and above oil level		None
	Cu	+2.29			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
	Al	No change	Neut. no.	48+ hr	
	Ti	L tan	100°F vis	48+ hr	
	Ag	L yellow			
	Steel	Purple deposit			
	Cu	Orange deposit			
	Mg	No change			
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 308-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-805 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.62	—	3.76	0.41	
16 hr	15.06	3.0	3.83	1.65	
24 hr	15.16	3.7	3.83	1.96	
40 hr	15.26	4.4	3.84	2.82	
48 hr	15.46	5.7	3.89	3.99	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.04	Sludge in oil: 200-mesh filter		None
	Ti	-0.06	Centrifuge, vol %		1.0
	Ag	0.00	Tube deposits: Below oil level		L var
	Steel	+0.04	At and above oil level		M var
	Cu	+1.44			
Metal discoloration, deposits, pitting, or etching:	Mg	+0.08	Breakpoint Data		
	Al	L yellow	Neut. no.		45 hr
	Ti	L yellow	100°F vis		48+ hr
	Ag	Yellow	Test Conditions		
	Steel	Green	Sample temperature, °F		385
	Cu	Brown deposit	Sample volume, ml		200
	Mg	L brown	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 308-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-806 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.27	—	3.54	0.45	
16 hr	14.55	2.0	3.59	1.03	
24 hr	14.58	2.2	3.60	1.39	
40 hr	14.87	4.2	3.60	2.74	
48 hr	16.31	14.3	3.83	9.00	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.06	Sludge in oil: 200-mesh filter		None
	Ti	0.00	Centrifuge, vol %		Trace
	Ag	-0.08	Tube deposits: Below oil level		None
	Steel	0.00	At and above oil level		M var
	Cu	-0.08			
Metal discoloration, deposits, pitting, or etching:	Mg	+0.04	Breakpoint Data		
	Al	No change	Neut. no.		36 hr
	Ti	L yellow	100°F vis		42 hr
	Ag	Yellow	Test Conditions		
	Steel	Blue	Sample temperature, °F		385
	Cu	Brown	Sample volume, ml		200
	Mg	No change	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 308-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-807 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.78	—	3.59	0.34	
16 hr	14.04	1.9	3.63	1.19	
24 hr	14.00	1.6	3.60	1.43	
40 hr	15.21	10.4	3.78	9.41	
48 hr	16.66	20.9	4.01	15.79	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al -0.04 Ti 0.00 Ag -0.08 Steel 0.00 Cu -0.75 Mg -0.04 Metal discoloration, deposits, pitting, or etching: Al No change Ti L yellow Ag Yellow Steel Blue Cu M pitting Mg L brown			Sludge in oil:	200-mesh filter Centrifuge, vol %	None Trace
			Tube deposits:	Below oil level At and above oil level	None M var
			Breakpoint Data		
			Neut. no.	28 hr	
			100°F vis	38 hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 308-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-808 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.38	—	3.39	0.39	
16 hr	13.69	2.3	3.42	0.72	
24 hr	13.76	2.8	3.44	1.12	
40 hr	13.88	3.7	3.46	1.74	
48 hr	15.19	13.5	3.65	7.68	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al 0.00 Ti 0.00 Ag -0.06 Steel +0.02 Cu +1.89 Mg +0.06 Metal discoloration, deposits, pitting, or etching: Al No change Ti L yellow Ag Yellow Steel Blue Cu Brown deposit Mg No change			Sludge in oil:	200-mesh filter Centrifuge, vol %	None Trace
			Tube deposits:	Below oil level At and above oil level	None L var
			Breakpoint Data		
			Neut. no.	40 hr	
			100°F vis	43 hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 308-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-809 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.37	—	3.35	0.36	
16 hr	13.69	2.4	3.41	0.99	
24 hr	13.76	2.9	3.43	1.13	
40 hr	13.91	4.0	3.45	1.67	
48 hr	15.19	13.6	3.64	7.05	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			L var		
			Breakpoint Data		
			Neut. no. 40 hr		
			100°F vis 43 hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 308-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-810 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.89	—	3.65	0.32	
16 hr	14.08	1.4	3.67	0.98	
24 hr	14.13	1.7	3.66	1.16	
40 hr	15.10	8.7	3.79	9.21	
48 hr	16.39	18.0	3.98	15.87	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			Trace		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			M var		
			Breakpoint Data		
			Neut. no. 30 hr		
			100°F vis 40 hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 308-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-7725 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.67	—	3.54	0.50	
16 hr	13.87	1.5	3.56	1.00	
24 hr	14.24	4.2	3.58	3.34	
40 hr	17.69	29.4	4.12	16.86	
48 hr	19.79	44.8	4.46	22.5	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.04	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	Trace
	Ag	-0.04	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	M var
	Cu	-1.97			
	Mg	-0.10	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		
	Ti	L yellow	100°F vis		
	Ag	Yellow	17 hr		
	Steel	Blue	28 hr		
	Cu	M pitting & L etching	Test Conditions		
	Mg	No change	Sample temperature, °F		
			Sample volume, ml		
			Air rate, liter/hr		
			Condensate return		

TEST NO. 309-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	1,173	231	22.09	0.19	
24 hr	2,788	686	32.94	0.40	
40 hr	26,106	7,264	93.80	0.40	
48 hr	147,438	41,490	220.0	0.38	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	—
	Ag	-0.47	Tube deposits:	Below oil level	L var
	Steel	+0.16		At and above oil level	M var
	Cu	-0.34			
	Mg	+0.16	Test Conditions		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Sample temperature, °F		
	Ti	Blue	Sample volume, ml		
	Ag	L etching	Air rate, liter/hr		
	Steel	Black	Condensate return		
	Cu	L etching			
	Mg	Gray			

TEST NO. 309-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	1,085	206	21.26	0.25	
24 hr	2,346	562	38.38	0.24	
40 hr	15,175	4,181	73.04	0.32	
48 hr	58,334	16,355	142.0	0.35	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	—
	Ag	-0.67	Tube deposits:	Below oil level	L var
	Steel	+0.20		At and above oil level	M var
	Cu	-0.83			
	Mg	-0.22			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		644
	Ti	Blue	Sample volume, ml		200
	Ag	L etching	Air rate, liter/hr		10
	Steel	Black deposit	Condensate return		Yes
	Cu	L pitting & etching			
	Mg	L etching			

TEST NO. 309-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6		13.02	0.01	
16 hr	412.3	15.3	13.84	0.04	
24 hr	430.0	20.2	14.09	0.02	
40 hr	463.5	29.6	14.53	0.04	
48 hr	482.4	34.9	14.87	0.00	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.14	Tube deposits:	Below oil level	None
	Steel	+0.16		At and above oil level	L var
	Cu	+0.24			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
	Al	No change	Sample temperature, °F		644
	Ti	L brown	Sample volume, ml		200
	Ag	Yellow	Air rate, liter/hr		10
	Steel	Gray	Condensate return		Yes
	Cu	Black deposit			
	Mg	Brown			

TEST NO. 309-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	
16 hr	412.2	15.3	13.84	0.04	
24 hr	430.4	20.4	14.08	0.07	
40 hr	466.0	30.3	14.53	0.02	
48 hr	486.0	35.9	14.88	0.01	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			At and above oil level		
			None		
			L var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			644		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 309-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON M-1041(a) AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss wt %	
Initial	71.34	—	6.88	0.09		
16 hr	98.64	38.3	8.03	0.07		
24 hr	112.1	57.1	8.54	0.12		
40 hr	145.5	104	9.66	0.18		
48 hr	164.1	130	10.23	0.14	2	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	Trace	
	Ti	+0.02		Centrifuge, vol %	0.8	
	Ag	-0.26		Tube deposits:	Below oil level	L var
	Steel	-0.45			At and above oil level	M var
	Cu	-4.42				
	Mg	-0.37				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions			
	Ti	L brown	Sample temperature, °F	644		
	Ag	I etching	Sample volume, ml	200		
	Steel	L etching	Air rate, liter/hr	10		
	Cu	M pitting & L etching	Condensate return	Yes		
	Mg	L etching				
(a) Blend (1:1) of O-64-28 and O-67-1.						

TEST 310-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON M-1041(a) AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	71.34		6.88	0.09		
16 hr	80.87	13.4	7.27	0.00		
24 hr	82.90	16.2	7.34	0.02		
40 hr	85.30	19.6	7.47	0.03		
48 hr	86.50	21.2	7.53	0.02	1	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace	
	Ti	-0.02		Centrifuge, vol %	Trace	
	Ag	-0.34		Tube deposits:	Below oil level	L var
	Steel	-0.16			At and above oil level	L var
	Cu	-4.85				
	Mg	-0.02				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions			
	Ti	Yellow	Sample temperature, °F	608		
	Ag	L pitting	Sample volume, ml	200		
	Steel	Black	Air rate, liter/hr	10		
	Cu	L pitting & H etching	Condensate return	Yes		
	Mg	No change				
(a) Blend (1:1) of O-64-20 and O-67-1.						

TEST NO. 312-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	27.41	—	5.04	0.10	5	
24 hr	30.75	12.2	5.43	0.52		
40 hr	31.36	14.4	5.52	0.67		
48 hr	31.68	15.6	5.55	0.54		
64 hr	32.23	17.6	5.65	0.59		
72 hr	32.51	18.6	5.65	0.55		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter Centrifuge, vol %	None		
	Ti	+0.02		None		
	Ag	-0.02				
	Steel	0.00		Tube deposits: Below oil level At and above oil level	None	
	Cu	-0.04			L var	
	Mg	0.00				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data			
	Ti	L yellow	Neut. no. 72+ hr 100°F vis 72+ hr			
	Ag	L yellow				
	Steel	Blue	Test Conditions			
	Cu	Blue-red	Sample temperature, °F 392 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes			
	Mg	No change				

TEST NO. 312-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.77	—	3.13	0.24	
24 hr	13.70	7.3	3.27	1.28	
40 hr	13.93	9.1	3.31	1.28	
48 hr	14.02	9.8	3.32	1.19	
64 hr	14.19	11.1	3.36	1.38	
72 hr	14.24	11.5	3.36	1.81	5

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	+0.10			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
			Neut. no	72+ hr	
			100°F vis	72+ hr	
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F	392	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 312-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-7 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	17.34	-	4.58	0.26	10
24 hr	16.50	-4.8	4.32	1.76	
40 hr	15.65	-9.8	3.90	10.19	
48 hr	17.17	-1.0	4.10	16.02	
64 hr	24.83	+43.1	5.57	26.2	
72 hr	162.1	+835	37.50	31.0	

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	M var & L carbon
	Cu	-3.65			
	Mg	-14.4			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L green	Neut. no.	19 hr	
	Ag	Yellow		100°F vis	41 hr
	Steel	Green	Test Conditions		
	Cu	M etching	Sample temperature, °F	392	
	Mg	H pitting & etching	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 312-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87	-	3.69	0.04	
24 hr	14.82	-0.3	3.66	1.37	
40 hr	14.65	-1.5	3.63	1.63	
48 hr	14.59	-1.9	3.58	2.74	
64 hr	17.47	+17.5	3.97	12.28	
72 hr	19.57	+31.6	4.29	16.98	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % None		
			Tube deposits: Below oil level L var		
			At and above oil level M & H var		
			Breakpoint Data		
			Neut. no. 44 hr		
			100°F vis 53 hr		
			Test Conditions		
			Sample temperature, °F 392		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 312-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-11 AT 329°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26	-	3.21	0.05	
24 hr	14.24	7.4	3.36	0.95	
40 hr	14.48	9.2	3.42	1.23	
48 hr	14.61	10.2	3.41	1.31	
64 hr	14.88	12.2	3.48	1.48	
72 hr	15.01	13.2	3.50	1.84	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % None		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 72+ hr		
			100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 392		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 312-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-21 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.92	—	3.15	0.14	3
24 hr	13.96	8.0	3.32	0.60	
40 hr	14.13	9.4	3.33	1.28	
48 hr	14.24	10.2	3.36	1.55	
64 hr	14.41	11.5	3.38	1.25	
72 hr	14.49	12.2	3.41	1.57	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter		None
	Ti	-0.08	Centrifuge, vol %		None
	Ag	-0.04	Tube deposits: Below oil level		None
	Steel	0.00	At and above oil level		None
	Cu	-0.06			
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L yellow	Neut. no.		72+ hr
	Ag	No change	100°F vis		72+ hr
	Steel	Blue-green	Test Conditions		
	Cu	Yellow	Sample temperature, °F		392
	Mg	No change	Sample volume, ml		200
			Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 312-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-24 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.04	—	3.47	0.24	7
24 hr	13.22	1.4	3.44	2.27	
40 hr	13.29	1.9	3.44	2.87	
48 hr	13.70	5.1	3.47	6.34	
64 hr	17.74	36.0	4.06	23.9	
72 hr	20.82	59.7	4.51	33.3	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil: 200-mesh filter		None
	Ti	-0.06	Centrifuge, vol %		None
	Ag	-0.10	Tube deposits: Below oil level		None
	Steel	0.00	At and above oil level		None
	Cu	-0.30			
	Mg	-3.83	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		40 hr
	Ti	L yellow	100°F vis		53 hr
	Ag	L brown	Test Conditions		
	Steel	Purple	Sample temperature, °F		392
	Cu	L etching	Sample volume, ml		200
	Mg	M pitting	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 312-8. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-68-1 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.29	-	3.21	0.00	
24 hr	14.17	6.6	3.36	0.62	
40 hr	14.43	8.5	3.39	0.80	
48 hr	14.54	5.4	3.41	0.83	
64 hr	14.71	10.7	3.44	0.99	
72 hr	14.78	11.2	3.45	1.29	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.52		Centrifuge, vol %	None
	Ag	-0.04	Tube deposits:	Below oil level	L var
	Steel	0.00		At and above oil level	None
	Cu	-0.04			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no. 72+ hr 100°F vis 72+ hr		
	Ti	L yellow			
	Ag	L yellow	Test Conditions		
	Steel	Purple-yellow			
	Cu	Red-green	Sample temperature, °F 392 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Mg	No change			

TEST NO. 313-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-20 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	24.27		4.08	0.10	
72 hr	30.93	27.4	4.71	0.11	
120 hr	35.95	48.1	5.11	0.09	
168 hr	40.37	66.3	5.43	0.09	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.14	Sludge in oil:	200-mesh filter	None
	Ti	+0.06		Centrifuge, vol %	Trace
	Ag	-5.38	Tube deposits:	Below oil level	L var
	Steel	-0.06		At and above oil level	L var
	Cu	-27.4			
	Mg		Test Conditions		
Metal discoloration, deposits, pitting, or etching:	Al	Brown	Sample temperature, °F 608 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Ti	L yellow-blue			
	Ag	M etching			
	Steel	Green-red			
	Cu	H etching & pitting			
	Mg				

TEST NO. 314-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.41		5.04	0.10	
24 hr	31.11	13.5	5.48	0.63	
40 hr	32.01	16.8	5.58	0.63	
48 hr	32.35	18.0	5.62	0.71	
64 hr	33.11	20.8	5.72	0.74	
72 hr	33.52	22.3	5.76	1.01	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.04	Tube deposits:	Below oil level	None
	Steel	+0.06		At and above oil level	L var
	Cu	0.00			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	72+ hr	
	Ag	L yellow	100°F vis	72+ hr	
	Steel	Blue-green	Test Conditions		
	Cu	Orange	Sample temperature, °F	401	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 314-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-12 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.79		3.52	0.25	
24 hr	14.88	7.9	3.71	2.74	
40 hr	14.95	8.4	3.72	3.60	
48 hr	15.22	10.4	3.77	5.13	
64 hr	18.59	34.8	4.18	15.91	
72 hr	21.21	53.8	4.63	20.5	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.63	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.41		Centrifuge, vol %	Trace
	Ag	+0.36	Tube deposits:	Below oil level	H var
	Steel	+0.37		At and above oil level	H var & L carbon
	Cu	-0.67			
	Mg	+0.41			
Metal discoloration, deposits, pitting, or etching	Al	Black-brown deposit	Breakpoint Data		
	Ti	Black-brown deposit	Neut. no.	41 hr	
	Ag	Black-brown deposit	100°F vis	52 hr	
	Steel	Black-brown deposit	Test Conditions		
	Cu	L etching	Sample temperature, °F	401	
	Mg	Black-brown deposit	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 314-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-21 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11	—	3.76	0.07	6
24 hr	15.11	0.0	3.69	1.95	
40 hr	15.72	4.0	3.68	7.55	
48 hr	17.41	15.2	3.91	10.98	
64 hr	22.10	46.3	4.66	17.80	
72 hr	24.95	65.1	5.08	21.7	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	−0.04	Sludge in oil: 200-mesh filter		None
	Ti	+0.02	Centrifuge, vol %		None
	Ag	0.00	Tube deposits: Below oil level		None
	Steel	+0.04	At and above oil level		M var
	Cu	−0.36	Breakpoint Data		
	Mg	−0.16			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	18 hr	
	Ti	Blue	100°F vis	40 hr	
	Ag	L yellow	Test Conditions		
	Steel	Green			
	Cu	L etching	Sample temperature, °F	401	
	Mg	L yellow	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 314-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 401°F

	Vis, cs/210°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	2.77	—	3.13	0.24	4
24 hr	13.82	8.2	3.30	1.35	
40 hr	14.11	10.5	3.34	1.72	
48 hr	14.25	11.6	3.36	1.73	
64 hr	16.53	29.4	3.68	6.02	
72 hr	19.12	49.7	4.02	10.58	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	−0.04	Sludge in oil: 200-mesh filter		None
	Ti	0.00	Centrifuge, vol %		None
	Ag	0.00	Tube deposits: Below oil level		None
	Steel	+0.08	At and above oil level		None
	Cu	+0.06	Breakpoint Data		
	Mg	−0.04			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	56 hr	
	Ti	No change	100°F vis	56 hr	
	Ag	L yellow	Test Conditions		
	Steel	Brown			
	Cu	Orange-brown	Sample temperature, °F	401	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 314-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87	—	3.69	0.4	
24 hr	14.75	-0.8	3.63	1.68	
40 hr	15.44	+3.8	3.65	7.58	
48 hr	17.24	+15.9	3.93	12.57	
64 hr	22.57	+51.8	4.74	19.08	
72 hr	25.87	+74.0	5.26	22.6	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % None		
			Tube deposits: Below oil level L var		
			At and above oil level L & M var		
			Breakpoint Data		
			Neut. no. 33 hr		
			100°F vis 40 hr		
			Test Conditions		
			Sample temperature, °F 401		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 314-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-11 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26	—	3.21	0.05	
24 hr	14.42	8.7	3.38	1.32	
40 hr	14.77	11.4	3.45	1.32	
48 hr	15.02	13.3	3.49	2.12	
64 hr	19.84	49.6	4.13	9.46	
72 hr	22.90	72.7	4.53	11.88	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % None		
			Tube deposits: Below oil level None		
			At and above oil level None		
			Breakpoint Data		
			Neut. no. 46 hr		
			100°F vis 54 hr		
			Test Conditions		
			Sample temperature, °F 401		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 314-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-20 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.48	—	3.25	0.21	5
24 hr	14.69	9.0	3.39	1.01	
40 hr	15.00	11.3	3.49	1.59	
48 hr	15.22	12.9	3.49	1.64	
64 hr	16.58	23.0	3.70	4.47	
72 hr	18.61	38.1	4.00	9.03	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.04	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	None
	Cu	-0.18			
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	55 hr	
	Ag	L yellow	100°F vis	61 hr	
	Steel	Blue	Test Conditions		
Cu	Brown	Sample temperature, °F	401		
Mg	No change	Sample volume, ml	200		
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 314-8. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-68-1 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.29	—	3.21	0.00	4
24 hr	14.41	8.4	3.37	0.84	
40 hr	14.66	10.3	3.43	1.26	
48 hr	14.83	11.6	3.45	1.44	
64 hr	15.23	14.6	3.51	1.77	
72 hr	15.84	19.2	3.60	3.61	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.06	Tube deposits:	Below oil level	None
	Steel	+0.12		At and above oil level	None
	Cu	-0.10			
	Mg	0.00	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.	65 hr	
	Ti	L brown	100°F vis	71 hr	
	Ag	L yellow	Test Conditions:		
	Steel	Red-yellow	Sample temperature, °F	401	
	Cu	Red-green	Sample volume, ml	200	
	Mg	No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 315-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON M-1051^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut No., mg KOH/g	Oil Loss, wt %
Initial	13.81	—	3.38	0.08	1
16 hr	14.29	3.5	3.47	0.42	
24 hr	14.41	4.3	3.47	0.52	
40 hr	14.51	5.1	3.49	0.69	
48 hr	14.55	5.4	3.50	0.85	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.04		At and above oil level	None
	Cu	-0.04			
	Mg	-0.06			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
	Al	No change	Neut. no.	48+ hr	
	Ti	L tan		100°F vis	48+ hr
	Ag	No change	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	Yellow-orange		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
		Condensate return		Yes	
(a) Blend (1:1:1) of O-67-9, O-67-11, and O-67-20.					

TEST NO. 315-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON M-1052^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No. mg KOH/g	Oil Loss, wt %
Initial	13.58	—	3.41	0.16	2
16 hr	14.02	3.2	3.46	0.49	
24 hr	14.06	3.5	3.44	0.70	
40 hr	14.20	4.6	3.47	1.17	
48 hr	14.24	4.9	3.45	1.46	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.18			
	Mg	-0.08			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
	Al	No change	Neut. no.	48+ hr	
	Ti	L tan		100°F vis	48+ hr
	Ag	L brown	Test Conditions		
	Steel	Purple	Sample temperature, °F	385	
	Cu	Brown		Sample volume, ml	200
	Mg	No change		Air rate, liter/hr	10
		Condensate return		Yes	
(a) Blend (1:1:1:1) of O-67-9, O-67-11, O-67-20, and O-67-24.					

TEST NO. 315-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON M-1053^(a) AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.71	—	3.34	0.12	3
16 hr	14.28	4.2	3.44	0.32	
24 hr	14.36	4.7	3.44	0.43	
40 hr	14.50	5.8	3.39	0.62	
48 hr	14.57	6.3	3.47	0.82	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	-0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	0.00			
	Cu	-0.10		At and above oil level	None
	Mg	-0.02			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
	Al	No change	Neut. no.	48+ hr	
	Ti	L tan	100°F vis	48+ hr	
	Ag	No change	Test Conditions		
	Steel	Blue	Sample temperature, °F	385	
	Cu	Orange	Sample volume, ml	200	
	Mg	No change	Air rate, liter/hr	10	
			Condensate return	Yes	
(a) Blend (1:1:1:1) of O-67-9, O-67-11, O-67-20, and O-68-1.					

TEST NO. 316-1. RESULT OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 644°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	4
16 hr	1,023	189	21.10	0.16	
24 hr	2,179	515	28.95	0.26	
40 hr	12,468	3517	66.55	(a)	
48 hr	Semisolid	—	121.1	0.34	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.02	Sludge in oil:	200-mesh filter	None
	Ti	-0.04		Centrifuge, vol %	None
	Ag	-0.67	Tube deposits:	Below oil level	None
	Steel	+0.02			
	Cu	-1.52		At and above oil level	M var
	Mg	-0.06			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	Blue	Sample temperature, °F	644	
	Ag	L etching	Sample volume, ml	200	
	Steel	Black	Air rate, liter/hr	10	
	Cu	L etching	Condensate return	Yes	
	Mg	Gray			
(a) Sample lost in handling.					

TEST NO. 317-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-62-25 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.56	—	3.52	0.06	
16 hr	17.03	9.4	3.74	1.18	
24 hr	18.40	18.3	3.88	2.81	
40 hr	22.57	45.1	4.51	7.20	
48 hr	25.36	63.0	4.89	11.60	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.12	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.08		Centrifuge, vol %	None
	Ag	+0.08	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	-1.05			
	Mg	—			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	L brown	Sample temperature, °F	428	
	Ag	L yellow		200	
	Steel	Yellow-green		10	
	Cu	L pitting		Yes	
	Mg	—			

TEST NO. 317-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-61-17 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.69		3.57	0.04	
16 hr	17.62	12.3	3.84	0.83	
24 hr	18.00	14.7	3.89	0.99	
40 hr	18.84	20.1	4.01	2.13	
48 hr	19.87	26.6	4.17	4.93	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.06	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.18	Tube deposits:	Below oil level	None
	Steel	+0.18		At and above oil level	L var
	Cu	-0.24			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	L brown	Test Conditions		
	Ti	L brown	Sample temperature, °F	428	
	Ag	L yellow		200	
	Steel	Blue		10	
	Cu	L pitting		Yes	
	Mg				

TEST NO. 317-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-33 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss wt %
Initial	18.12		4.09	0.14	
16 hr	19.01	4.9	4.09	2.18	
24 hr	19.96	10.2	4.20	3.03	
40 hr	23.27	28.4	4.64	5.97	
48 hr	26.28	45.0	5.06	10.00	15
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.16	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.08		Centrifuge, vol %	None
	Ag	+0.24	Tube deposits:	Below oil level	None
	Steel	+0.16		At and above oil level	None
	Cu	-13.5			
Metal discoloration, deposits, pitting, or etching:	Mg		Test Conditions		
	Al	No change	Sample temperature, °F 428 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Ti	L brown			
	Ag	L gray deposit			
	Steel	Blue-green			
	Cu	L pitting & H etching			
	Mg				

TEST NO. 317-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-1 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs 210°F	Neut. No. mg KOH/g	Oil Loss, wt %
Initial	25.48		5.06	0.14	
16 hr	33.21	30.3	6.01	1.99	
24 hr	36.99	45.2	6.46	2.14	
40 hr	48.02	88.5	7.75	3.67	
48 hr	56.40	121	8.69	5.54	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.18	Sludge in oil:	200-mesh filter	None
	Ti	0.04		Centrifuge, vol %	None
	Ag	+0.14	Tube deposits:	Below oil level	None
	Steel	+0.16		At and above oil level	L & M var
	Cu	-6.25			
Metal discoloration, deposits, pitting, or etching:	Mg		Test Conditions		
	Al	No change	Sample temperature, °F 428 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Ti	L brown			
	Ag	No change			
	Steel	Blue			
	Cu	L etching & pitting			
	Mg				

TEST NO. 317-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.50	—	5.08	0.07	
16 hr	31.47	14.4	5.54	0.94	
24 hr	32.44	18.0	5.65	1.29	
40 hr	34.74	26.3	5.90	2.40	
48 hr	36.49	32.7	6.10	4.28	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.14	Sludge in oil:	200-mesh filter	None
	Ti	-0.06		Centrifuge, vol %	None
	Ag	+0.16	Tube deposits:	Below oil level	None
	Steel	+0.12		At and above oil level	L var
	Cu	-0.14			
Metal discoloration, deposits, pitting, or etching:	Mg	—	Test Conditions		
	Al	No change	Sample temperature, °F		
	Ti	L brown	Sample volume, ml		
	Ag	L yellow	Air rate, liter/hr		
	Steel	Green	Condensate return		
	Cu	Orange			
	Mg	—			

TEST NO. 317-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-7 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	74.74	—	6.03	0.25	
16 hr	91.97	23.1	6.79	0.90	
24 hr	101.1	35.3	7.09	0.99	
40 hr	137.8	84.4	8.77	2.25	
48 hr	231.4	210	10.87	3.86	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.06	Sludge in oil:	200-mesh filter	None
	Ti	+0.12		Centrifuge, vol %	None
	Ag	+0.16	Tube deposits:	Below oil level	None
	Steel	+0.14		At and above oil level	None
	Cu	-5.54			
Metal discoloration, deposits, pitting, or etching:	Mg	—	Test Conditions		
	Al	No change	Sample temperature, °F		
	Ti	L brown	Sample volume, ml		
	Ag	No change	Air rate, liter/hr		
	Steel	Blue	Condensate return		
	Cu	L pitting & etching			
	Mg	—			

TEST NO. 317-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-13 AT 428°F

TEST NO. 5777. RESULTS OF REFLEX OXIDATION-CORROSION TEST ON C-64-13 AT 428 F					
	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.43	-	5.32	0.28	4
16 hr	31.00	9.0	5.68	0.51	
24 hr	31.89	12.2	5.78	0.83	
40 hr	34.73	22.2	6.13	3.07	
48 hr	36.38	28.0	6.33	7.51	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.12		Centrifuge, vol %	Trace
	Ag	-0.10	Tube deposits:	Below oil level	None
	Steel	+0.12		At and above oil level	None
	Cu	-2.17			
	Mg	-			
Metal discoloration, deposits, pitting, or etching:	Al	L brown	Test Conditions		
	Ti	L green	Sample temperature, °F	428	
	Ag	Brown	Sample volume, ml	200	
	Steel	Blue-green	Air rate, liter/hr	10	
	Cu	M etching	Condensate return	Yes	
	Mg	-			

TEST NO. 317-8. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-16 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	26.69		5.13	0.20	2
16 hr	30.53	14.4	5.57	1.48	
24 hr	31.46	17.9	5.69	1.87	
40 hr	33.72	26.3	5.95	3.23	
48 hr	35.30	32.30	6.14	5.80	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.08		Centrifuge, vol %	None
	Ag	+0.16	Tube deposits:	Below oil level	None
	Steel	+0.08		At and above oil level	1 var
	Cu	+0.10			
	Mg				
Metal discoloration, deposits, pitting, or etching	Al	No change	Test Conditions		
	Ti	L brown	Sample temperature, °F	428	
	Ag	L brown	Sample volume, ml	200	
	Steel	Yellow-green	Air rate, liter/hr	10	
	Cu	Orange	Condensate return	Yes	
	Mg				

TEST NO. 318-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-719 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.38		4.00	5.86	
16 hr	16.58	1.2	4.02	5.98	
24 hr	16.59	1.3	4.04	7.05	
40 hr	18.12	10.6	4.19	14.81	
48 hr	19.64	19.9	4.41	19.54	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.14	Sludge in oil:	200-mesh filter	None
	Ti	+0.08		Centrifuge, vol %	Trace
	Ag	+0.14	Tube deposits:	Below oil level	None
	Steel	+0.18		At and above oil level	M var
	Cu	-0.75			
	Mg	+0.18	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	1 brown	Neut. no. 20 hr		
	Ti	Yellow-brown			
	Ag	1 yellow	100°F vis 36 hr		
	Steel	Purple			
	Cu	1 pitting	Test Conditions		
	Mg	No change			
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 318-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-770 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.26		3.39	0.38	
16 hr	13.53	2.0	3.43	0.84	
24 hr	13.56	2.3	3.44	1.10	
40 hr	14.78	11.5	3.62	7.16	
48 hr	16.60	25.2	3.90	14.08	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.16	Sludge in oil:	200-mesh filter	None
	Ti	+0.16		Centrifuge, vol %	None
	Ag	+0.08	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	1 var
	Cu	-0.51			
	Mg	+0.16	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching	Al	1 brown	Neut. no. 29 hr		
	Ti	Yellow-brown			
	Ag	1 yellow	100°F vis 38 hr		
	Steel	Blue			
	Cu	1 etching	Test Conditions		
	Mg	No change			
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 318-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON VIT. C AT 385°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No. mg KOH/g	Oil loss, wt %
Initial	14.02		3.50	3.57	
16 hr	14.38	2.6	3.52	2.95	
24 hr	14.52	3.6	3.54	3.13	
40 hr	14.64	4.4	3.57	3.48	
48 hr	14.70	4.9	3.57	3.44	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.18	Sludge in oil:	200-mesh filter	None
	Ti	+0.16		Centrifuge, vol %	Trace
	Ag	+0.10	Tube deposits:	Below oil level	None
	Steel	+0.06		At and above oil level	1. var
	Cu	-0.18			
	Mg	+0.08			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
Al	Ti	1. brown	Neut. no.	48+ hr	
	Ag	Yellow-brown	100°F vis	48+ hr	
	Steel	1. yellow	Test Conditions		
	Cu	Blue	Sample temperature, °F	385	
	Mg	Brown	Sample volume, ml	200	
		No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 318-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATI-753 AT 385°F

	Vis., cs/100°F	100°F Vis Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil loss, wt %
Initial	13.73		3.48	0.23	
16 hr	14.14	3.0	3.48	0.71	
24 hr	14.17	3.2	3.48	0.95	
40 hr	14.24	3.7	3.46	1.33	
48 hr	14.25	3.8	3.50	1.39	1
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.16	Sludge in oil:	200-mesh filter	None
	Ti	+0.12		Centrifuge, vol %	None
	Ag	+0.16	Tube deposits:	Below oil level	None
	Steel	+0.12		At and above oil level	1. var
	Cu	-0.20			
	Mg	+0.08			
Metal discoloration, deposits, pitting, or etching:			Breakpoint Data		
Al	Ti	1. brown	Neut. no.	48+ hr	
	Ag	Yellow-brown	100°F vis	48+ hr	
	Steel	1. yellow	Test Conditions		
	Cu	Blue	Sample temperature, °F	385	
	Mg	1. etching	Sample volume, ml	200	
		No change	Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 319-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-16 AT 428°F

	Vis., cs/100°F	100°F Vis. Increase, %	Vis., cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.33		5.31	0.14	
16 hr	31.52	11.3	5.75	0.93	
24 hr	32.30	14.0	5.85	1.16	
40 hr	33.75	19.1	6.03	2.09	
48 hr	34.84	23.0	6.15	2.51	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	+0.06	Tube deposits:	Below oil level	None
	Steel	0.02		At and above oil level	L & M var
	Cu	-0.20			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	L brown	Sample temperature, °F	428	
	Ag	L brown		Sample volume, ml	
	Steel	Green		Air rate, liter/hr	
	Cu	L etching		Condensate return	
	Mg				

TEST NO. 319-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-14 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	26.24		4.95	0.00	
16 hr	29.76	13.5	5.51	1.23	
24 hr	30.76	17.4	5.64	1.75	
40 hr	33.51	27.9	5.97	4.37	
48 hr	35.35	34.9	6.15	6.09	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.04		Centrifuge, vol %	None
	Ag	+0.03	Tube deposits:	Below oil level	None
	Steel	0.04		At and above oil level	L var
	Cu	0.37			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	L brown	Test Conditions		
	Ti	L brown	Sample temperature, °F	428	
	Ag	L brown		Sample volume, ml	
	Steel	L purple		Air rate, liter/hr	
	Cu	L etching		Condensate return	
	Mg				

TEST NO. 319-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-15 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss wt %
Initial	28.61		5.36	0.14	
16 hr	32.24	12.7	5.80	0.86	
24 hr	33.03	15.4	5.90	1.07	
40 hr	34.69	21.3	6.09	1.96	
48 hr	36.00	25.8	6.23	2.29	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	-0.04	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	+0.06	Tube deposits:	Below oil level	None
	Steel	-0.02		At and above oil level	I. & M var
	Cu	-0.41			
	Mg	---	Test Conditions		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Sample temperature, °F 428 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Ti	L. brown			
	Ag	No change			
	Steel	L. green			
	Cu	L. etching			
	Mg				

TEST NO. 319-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-16 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	25.98		5.02	0.01	
16 hr	29.93	15.2	5.51	1.40	
24 hr	31.05	19.5	5.65	1.81	
40 hr	34.24	32.2	6.04	4.64	
48 hr	37.00	42.4	6.35	6.62	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.10		Centrifuge, vol %	None
	Ag	+0.06	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	I var
	Cu	-0.61			
	Mg		Test Conditions		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Sample temperature, °F 428 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
	Ti	L. brown			
	Ag	No change			
	Steel	Yellow-green			
	Cu	L. etching			
	Mg				

TEST NO. 319-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-4 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	29.19		5.51	0.10	
16 hr	32.16	10.2	5.73	1.12	
24 hr	33.12	13.5	5.83	3.04	
40 hr	36.34	24.5	6.20	4.43	
48 hr	39.06	33.8	6.47	8.11	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.10		Centrifuge, vol %	None
	Ag	0.06	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	1 var
	Cu	0.39			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	1 brown	Sample temperature, °F		
	Ag	No change	Sample volume, ml		
	Steel	Blue	Air rate, liter/hr		
	Cu	1 etching	Condensate return		
	Mg				

TEST NO. 319-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-405 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	34.45		6.31	0.09	
16 hr	36.85	7.0	6.45	0.63	
24 hr	36.96	7.3	6.43	1.14	
40 hr	37.45	8.7	6.44	2.03	
48 hr	37.84	9.8	6.47	3.20	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.10		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	1 var
	Steel	0.00		At and above oil level	1 var
	Cu	0.22			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	1 brown	Test Conditions		
	Ti	Brown	Sample temperature, °F		
	Ag	1 brown	Sample volume, ml		
	Steel	Yellow-green	Air rate, liter/hr		
	Cu	1 pitting	Condensate return		
	Mg				

TEST NO. 319-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1005 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	41.84		6.75	0.11	
16 hr	45.38	8.5	7.21	0.35	
24 hr	46.29	10.6	7.29	0.47	
40 hr	48.65	16.3	7.52	0.51	
48 hr	50.11	19.8	7.65	1.07	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.02	Sludge in oil:	290-mesh filter	None
	Ti	+0.06		Centrifuge, vol %	1.5
	Ag	+0.04	Tube deposits:	Below oil level	I. var
	Steel	-0.12		At and above oil level	None
	Cu	-1.91			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	I. brown	Test Conditions		
	Ti	I. brown	Sample temperature, °F		
	Ag	I. brown	Sample volume, ml		
	Steel	Blue	Air rate, liter/hr		
	Cu	I. etching	Condensate return		
	Mg				

TEST NO. 319-8. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-63-1002 AT 428°F

	Vis. cs/100°F	100°F Vis Increase, %	Vis. cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	46.75		8.18	0.16	
16 hr	52.82	13.0	8.70	1.72	
24 hr	57.52	23.0	9.19	2.77	
40 hr	69.57	48.8	10.48	3.36	
48 hr	77.86	66.5	11.36	4.50	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.04	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	0.02	Tube deposits:	Below oil level	None
	Steel	0.04		At and above oil level	None
	Cu	8.68			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	I. brown	Sample temperature, °F		
	Ag	No change	Sample volume, ml		
	Steel	Blue	Air rate, liter/hr		
	Cu	M pitting	Condensate return		
	Mg				

TEST NO. 320-1, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-1 AT 464°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %			
Initial	25.48		5.06	0.14				
16 hr	34.13	33.9	6.14	2.47				
24 hr	39.53	55.1	6.81	3.63				
40 hr	64.62	154	9.67	6.85				
48 hr	104.1	309	13.65	7.93	8			
Metal Specimen Data			Test Cell Data					
Weight change, mg/cm ²	Al	0.00	Sludge in oil:	200-mesh filter	None			
	Ti	0.00		Centrifuge, vol %	None			
	Ag	0.06	Tube deposits:	Below oil level	I var			
	Steel	0.17						
	Cu	7.28		At and above oil level	M var			
	Mg							
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions					
	Ti	1 yellow	Sample temperature, °F	464				
	Ag	No change		Sample volume, ml	200			
	Steel	Green			Air rate, liter/hr	10		
	Cu	Etching & M pitting				Condensate return	Yes	
	Mg							

TEST NO. 320-2, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-17 AT 464°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.37		5.29	0.33	
16 hr	33.21	17.1	5.91	0.94	
24 hr	34.90	23.0	6.12	1.27	
40 hr	37.93	33.7	6.50	2.05	
48 hr	39.31	38.6	6.69	3.18	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ²	Al	+0.16	Sludge in oil:	200-mesh filter	None
	Ti	+0.06		Centrifuge, vol %	1.0
	Ag	0.02	Tube deposits:	Below oil level	I var
	Steel	+0.04		At and above oil level	M var
	Cu	0.34			
	Mg				
Metal discoloration, deposits, pitting, or etching.	Al	Brown	Test Conditions		
	Ti	Brown	Sample temperature, °F	464	
	Ag	Yellow-orange	Sample volume, ml	200	
	Steel	Brown	Air rate, liter/hr	10	
	Cu	Etching	Condensate return	Yes	
	Mg				

TEST NO. 320-3, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1005 AT 464°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	41.84		6.75	0.11	
16 hr	62.19	48.6	9.38	1.61	
24 hr	74.37	77.7	10.94	1.51	
40 hr	109.4	161	15.18	1.22	
48 hr	141.6	238	19.81	1.48	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	Trace
	Ti	-0.02		Centrifuge, vol %	6.8
	Ag	0.00	Tube deposits:	Below oil level At and above oil level	1. var 1. var
	Steel	-7.24			
	Cu	-0.85			
	Mg				
Metal discoloration, deposits pitting, or etching:	Al	Black-brown	Test Conditions		
	Ti	L yellow	Sample temperature, °F	464	
	Ag	Yellow-black			
	Steel	L etching & M pitting			
	Cu	L etching			
	Mg		Sample volume, ml	200	
			Air rate, liter/hr	10	
		Condensate return	Yes		

TEST NO. 320-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-63-1002 AT 464°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	45.75		8.18	0.16	
16 hr	56.40	20.6	9.09	2.46	
24 hr	64.94	38.9	10.01	2.88	
40 hr	96.46	106	13.38	4.93	
48 hr	138.0	195	17.41	6.24	8

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	None
	Ti	-0.08		Centrifuge, vol %	None
	Ag	-0.06	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	L var
	Cu	-8.22			
	Mg				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions		
	Ti	L yellow			
	Ag	No change			
	Steel	Green-brown			
	Cu	L etching & M pitting			
	Mg				
Sample temperature, °F		464			
Sample volume, ml		200			
Air rate liter/hr		10			
Condensate return		Yes			

TEST NO. 321-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-17 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.37		5.29	0.33	
72 hr	36.70	29.4	6.36	1.02	
120 hr	42.19	48.7	6.98	2.10	
168 hr	66.97	136	10.15	5.05	11
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % 0.2		
			Tube deposits: Below oil level L var At and above oil level I & M var		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching:			Sample temperature, °F 428		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 321-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1005 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	41.84		6.75	0.11	
72 hr	55.66	33.0	8.25	0.48	
120 hr	86.42	107	12.41	0.35	
168 hr	88.68	112	12.53	0.45	18
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % 1.6		
			Tube deposits: Below oil level L var At and above oil level M var		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching:			Sample temperature, °F 428		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 322-1, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON Q-64-17 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	28.37		5.29	0.33	
16 hr	32.00	12.8	5.76	0.64	
24 hr	33.13	16.8	5.90	0.62	
40 hr	34.52	21.7	6.09	0.64	
48 hr	35.16	23.9	6.16	0.86	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	0.4
	Ag	0.00	Tube deposits:	Below oil level	I var
	Steel	0.04		At and above oil level	M var
	Cu	0.55			
Mg					
Metal discoloration, deposits, pitting, or etching:	Al	I yellow	Test Conditions		
	Ti	I brown	Sample temperature, °F	428	
	Ag	I yellow		Sample volume, ml	
	Steel	Blue-purple		Air rate, liter/hr	
	Cu	I pitting & etching		Condensate return	
Mg					

TEST NO. 322-2, RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-63-1002 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %		
Initial	46.75		8.18	0.16			
16 hr	53.77	15.0	8.79	1.65			
24 hr	58.88	25.9	9.35	2.06			
40 hr	71.54	53.0	10.69	2.68			
48 hr	80.84	72.9	11.63	3.80	6		
Metal Specimen Data			Test Cell Data				
Weight change, mg/cm ² :	Al	0.04	Sludge in oil:	200-mesh filter	None		
	Ti	0.00		Centrifuge, vol %	None		
	Ag	0.00	Tube deposits:	Below oil level	None		
	Steel	0.06		At and above oil level	None		
	Cu	8.34					
	Mg						
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions				
	Ti	I brown	Sample temperature, °F	428			
	Ag	No change		Sample volume, ml	200		
	Steel	Blue			Air rate, liter/hr	10	
	Cu	II pitting				Condensate return	Yes
	Mg						

TEST NO. 323-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-814 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.45		3.37	0.23	
16 hr	14.21	5.7	3.49	0.28	
24 hr	14.49	7.7	3.54	0.79	
40 hr	16.61	23.5	3.84	7.19	
48 hr	18.61	38.4	4.02	11.36	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.06		Centrifuge, vol %	0.2
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	-0.63			
	Mg	-0.08	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		25 hr
	Ti	L. yellow	100°F vis		32 hr
	Ag	White	Test Conditions		
	Steel	Blue	Sample temperature, °F		385
	Cu	L. etching	Sample volume, ml		200
	Mg	No change	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 323-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-825 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.08		3.56	4.26	
16 hr	14.35	1.9	3.61	4.89	
24 hr	14.47	2.8	3.63	5.39	
40 hr	16.24	15.3	3.86	15.41	
48 hr	17.69	25.6	4.18	20.4	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.10	Tube deposits:	Below oil level	None
	Steel	-0.04		At and above oil level	L. var
	Cu	-0.43			
	Mg	-0.06	Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Neut. no.		25 hr
	Ti	No change	100°F vis		34 hr
	Ag	L. yellow	Test Conditions		
	Steel	L. brown	Sample temperature, °F		385
	Cu	L. etching	Sample volume, ml		200
	Mg	No change	Air rate, liter/hr		10
			Condensate return		Yes

TEST NO. 324-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.77		3.13	0.24	
7 days	14.02	9.8	3.35	0.68	
14 days	14.48	13.4	3.40	0.79	
21 days	14.77	15.7	3.45	0.67	
26 days	14.86	16.4	3.48	0.74	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	None
	Ag	-0.12	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	None
	Cu	+0.12			
	Mg	-0.04			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	26+ days	
	Ag	No change	100°F vis	26+ days	
	Steel	Brown	Test Conditions		
	Cu	Gold	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 324-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87		3.69	0.04	
7 days	15.19	2.2	3.75	0.88	
14 days	15.07	1.3	3.71	1.23	
21 days	15.09	1.5	3.71	1.50	
26 days	15.72	5.7	3.96	2.25	7
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.04		Centrifuge, vol %	Trace
	Ag	-0.08	Tube deposits:	Below oil level	L var
	Steel	-0.02		At and above oil level	L var
	Cu	-0.10			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	Blue	Neut. no.	26+ days	
	Ag	L blue	100°F vis	26+ days	
	Steel	L green	Test Conditions		
	Cu	Brown	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 324-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-21 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.92		3.15	0.14	
7 days	14.32	10.8	3.38	0.62	
14 days	14.63	13.2	3.43	0.75	
21 days	14.89	15.2	3.46	0.77	
26 days	15.04	16.4	3.47	0.95	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	-0.02		At and above oil level	None
	Cu	-0.02			
	Mg	-0.04			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L. brown	Neut. no.	26+ days	
	Ag	L. yellow	100°F vis	26+ days	
	Steel	Blue	Test Conditions		
	Cu	Gold	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 324-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-24 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss wt %
Initial	13.04		3.47	0.24	
7 days	13.29	1.9	3.47	1.65	
14 days	13.31	2.1	3.44	2.64	
21 days	19.08	46.3	4.26	27.6	
26 days	36.08	177	6.48	60.3	15
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	None
	Ti	+0.08		Centrifuge, vol %	None
	Ag	-0.12	Tube deposits:	Below oil level	None
	Steel	0.00		At and above oil level	M var
	Cu	-0.63			
	Mg	-5.38			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L. brown	Neut. no.	13 days	
	Ag	L. yellow	100°F vis	17 days	
	Steel	L. brown	Test Conditions		
	Cu	L. etching	Sample temperature, °F	347	
	Mg	H pitting	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 324-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-68-2 AT 347°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.29		3.21	0.00	
7 days	14.56	9.6	3.41	0.45	
14 days	14.99	12.8	3.47	0.47	
21 days	15.36	15.6	3.55	0.58	
26 days	15.45	16.3	3.55	0.80	9
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	None
	Ti	-0.02		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	None
	Steel	+0.02		At and above oil level	None
	Cu	+0.02			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	26+ days	
	Ag	L yellow		100°F vis	26+ days
	Steel	Green	Test Conditions		
	Cu	Orange	Sample temperature, °F	347	
	Mg	No change	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 325-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.13		3.17	0.19	
24 hr	12.72	4.9	3.29	1.41	
40 hr	12.74	5.0	3.32	1.94	
48 hr	13.00	7.2	3.33	2.02	
64 hr	13.05	7.6	3.33	3.08	
72 hr	13.32	9.8	3.37	6.29	4

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.20	Sludge in oil:	200-mesh filter	Trace
	Ti	+0.26		Centrifuge, vol %	0.2
	Ag	+0.20	Tube deposits:	Below oil level	I & M var
	Steel	+0.22		At and above oil level	M & H var
	Cu	-0.36			
	Mg	+0.22			
Metal discoloration, deposits, pitting, or etching:	Al	Brown deposit	Breakpoint Data		
	Ti	Brown deposit	Neut. no.	61 hr	
	Ag	Brown deposit	100°F vis	72+ hr	
	Steel	Brown deposit	Test Conditions		
	Cu	I pitting	Sample temperature, °F	385	
	Mg	Brown deposit	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 325-2. RESULTS OF REF-LUX OXIDATION-CORROSION TEST ON O-64-12 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut No., mg KOH/g	Oil Loss, wt %
Initial	13.80		3.52	0.53	
24 hr	14.64	6.1	3.66	1.59	
40 hr	14.51	5.1	3.67	1.94	
48 hr	14.82	7.4	3.70	2.13	
64 hr	14.87	7.8	3.71	2.62	
72 hr	14.69	6.4	3.67	3.07	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace		
			Centrifuge, vol % 0.02		
			Tube deposits: Below oil level M & H var		
			At and above oil level H var & L carbon		
			Breakpoint Data		
			Neut. no. 72+ hr		
			100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 325-3. RESULTS OF REF-LUX OXIDATION-CORROSION TEST ON O-65-21 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	15.11		3.76	0.07	
24 hr	15.27	1.1	3.71	1.24	
40 hr	15.16	0.3	3.70	1.44	
48 hr	15.22	0.7	3.71	1.42	
64 hr	15.69	3.8	3.67	5.64	
72 hr	17.23	14.0	3.91	10.14	6
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None		
			Centrifuge, vol % Trace		
			Tube deposits: Below oil level L var		
			At and above oil level L & M var		
			Breakpoint Data		
			Neut. no. 56 hr		
			100°F vis 65 hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 325-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-66-11 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.41	-	4.30	0.16	
24 hr	15.90	-3.1	4.15	0.29	
40 hr	16.24	-1.0	3.88	8.68	
48 hr	18.82	+14.7	4.25	12.28	
64 hr	25.15	+53.3	5.10	19.08	
72 hr	28.74	+75.1	5.61	23.3	8
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al -0.06 Ti -0.02 Ag -0.06 Steel -0.04 Cu -0.26 Mg -2.50			Sludge in oil: 200-mesh filter Centrifuge, vol % None		
			Tube deposits: Below oil level L var At and above oil level None		
			Breakpoint Data		
			Neut. no. 24 hr 100°F vis 40 hr		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching: Al L yellow Ti L blue Ag L yellow Steel Green-yellow Cu L etching Mg L pitting & H etching			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 325-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.77	-	3.13	0.24	
24 hr	13.64	6.8	3.26	0.77	
40 hr	13.83	8.3	3.30	0.98	
48 hr	13.86	8.5	3.30	1.00	
64 hr	14.08	10.3	3.32	1.20	
72 hr	14.10	10.4	3.33	1.35	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al -0.02 Ti 0.00 Ag +0.02 Steel -0.06 Cu +0.10 Mg 0.00			Sludge in oil: 200-mesh filter Centrifuge, vol % None		
			Tube deposits: Below oil level None At and above oil level L var		
			Breakpoint Data		
			Neut. no. 72+ hr 100°F vis 72+ hr		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching: Al No change Ti L yellow Ag L yellow Steel Blue-green Cu Gold Mg No change			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 325-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-9 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.87	—	3.69	0.04	
24 hr	14.96	+0.6	3.70	0.97	
40 hr	14.84	-0.7	3.67	1.23	
48 hr	14.77	-0.7	3.55	1.30	
64 hr	15.02	+1.0	3.51	4.95	
72 hr	16.82	+13.1	3.85	10.90	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al -0.06 Ti -0.04 Ag +0.02 Steel -0.02 Cu -0.20 Mg -0.02 Metal discoloration, deposits, pitting, or etching: Al L yellow Ti Purple Ag L yellow Steel Blue Cu L etching Mg L brown			Sludge in oil:	200-mesh filter Centrifuge, vol %	None Trace
			Tube deposits:	Below oil level At and above oil level	None L & M var
			Breakpoint Data		
			Neut. no.	55 hr	
			100°F vis	66 hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 325-7. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-24 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.04	—	3.47	0.24	
24 hr	13.19	1.2	3.45	1.69	
40 hr	13.24	1.5	3.45	2.03	
48 hr	13.23	1.5	3.52	2.26	
64 hr	13.88	6.4	3.52	6.50	
72 hr	15.42	18.3	3.71	16.08	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al -0.02 Ti -0.08 Ag -0.02 Steel -0.02 Cu -0.12 Mg -0.24 Metal discoloration, deposits, pitting, or etching: Al No change Ti L yellow Ag L brown Steel L yellow Cu L brown Mg M etching			Sludge in oil:	200-mesh filter Centrifuge, vol %	None None
			Tube deposits:	Below oil level At and above oil level	None L var
			Breakpoint Data		
			Neut. no.	55 hr	
			100°F vis	64 hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 326-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-64-2 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	27.50	—	5.08	0.07	
24 hr	30.71	11.7	5.43	0.38	
40 hr	31.42	14.3	5.51	0.52	
48 hr	31.68	15.2	5.54	0.68	
64 hr	32.28	17.4	5.62	0.73	
72 hr	32.60	18.5	5.66	0.63	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level At and above oil level		
			Breakpoint Data		
			Neut. no. 72+ hr 100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 392 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 326-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.40	—	3.23	0.08	
24 hr	14.41	7.5	3.38	0.99	
40 hr	14.74	10.0	3.45	1.22	
48 hr	14.85	10.8	3.46	1.29	
64 hr	15.16	13.1	3.51	1.46	
72 hr	15.23	13.7	3.53	1.57	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Tube deposits: Below oil level At and above oil level		
			Breakpoint Data		
			Neut. no. 72+ hr 100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 392 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 326-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-3 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.77	-	3.13	0.24	
24 hr	13.65	6.9	3.26	0.94	
40 hr	13.88	8.7	3.31	1.25	
48 hr	13.97	9.4	3.32	1.60	
64 hr	14.19	11.1	3.36	1.62	
72 hr	14.21	11.3	3.38	1.80	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	0.00		Centrifuge, vol %	None
	Ag	-0.04	Tube deposits:	Below oil level	None
	Steel	-0.02		At and above oil level	L var
	Cu	+0.06			
	Mg	0.00			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	72+ hr	
	Ag	L yellow	100°F vis	72+ hr	
	Steel	Blue	Test Conditions		
	Cu	Gold	Sample temperature, °F	392	
	Mg	No change	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 326-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-8 AT 392°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.24	-	3.26	0.23	
24 hr	13.22	-0.2	3.34	1.79	
40 hr	14.83	+12.0	3.53	1.77	
48 hr	14.95	+12.9	3.54	2.11	
64 hr	15.26	+15.3	3.60	2.56	
72 hr	15.67	+18.4	3.65	3.44	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	None
	Ti	+0.02		Centrifuge, vol %	None
	Ag	-0.02	Tube deposits:	Below oil level	None
	Steel	-0.02		At and above oil level	None
	Cu	-0.28			
	Mg	+0.04			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data		
	Ti	L brown	Neut. no.	70 hr	
	Ag	L yellow	100°F vis	72+ hr	
	Steel	Blue	Test Conditions		
	Cu	L pitting	Sample temperature, °F	392	
	Mg	L brown	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 326-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-19 AT 392°F.

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.49	—	3.21	0.12	
24 hr	14.56	16.6	3.48	1.42	
40 hr	13.48	7.9	3.39	2.94	
48 hr	13.57	8.6	3.41	3.52	
64 hr	13.81	10.6	3.44	3.87	
72 hr	13.87	11.0	3.46	3.68	6

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	0.00	Sludge in oil:	200-mesh filter	Trace
	Ti	0.00		Centrifuge, vol %	None
	Ag	0.00	Tube deposits:	Below oil level	L var
	Steel	+0.04		At and above oil level	L var
	Cu	-0.02			
	Mg	+0.02			
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Breakpoint Data		
	Ti	L brown	Neut. no.	72+ hr	
	Ag	L yellow	100°F vis	72+ hr	
	Steel	Blue	Test Conditions		
	Cu	Gold	Sample temperature, °F	392	
	Mg	L brown	Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 327-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-60-18 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH./g	Oil Loss, wt %
Initial	12.13	-	3.17	0.19	
24 hr	12.97	6.9	3.33	2.22	
40 hr	13.38	10.3	3.38	5.95	
48 hr	14.84	22.3	3.60	12.61	
64 hr	19.74	62.7	4.36	24.6	
72 hr	23.41	93.0	4.92	29.9	7

Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.73	Sludge in oil:	200-mesh filter	0.1
	Ti	+0.34		Centrifuge, vol %	None
	Ag	+0.30	Tube deposits:	Below oil level	M & H var
	Steel	+0.36		At and above oil level	M & H var
	Cu	-0.45			
	Mg	+0.06			
Metal discoloration, deposits, pitting, or etching:	Al	Brown deposit	Breakpoint Data		
	Ti	Brown deposit	Neut. no.	18 hr	
	Ag	Brown deposit	100°F vis	41 hr	
	Steel	Brown deposit	Test Conditions		
	Cu	l. etching	Sample temperature, °F	401	
	Mg	Brown	Sample volume, ml	200	
		Air rate, liter/hr	10		
		Condensate return	Yes		

TEST NO. 327-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-31 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.40	—	3.23	0.08	
24 hr	14.46	7.9	3.41	1.11	
40 hr	14.89	11.1	3.48	1.28	
48 hr	15.10	12.7	3.54	1.47	
64 hr	15.42	15.1	3.55	1.84	
72 hr	15.70	17.2	3.61	2.09	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % None		
			Tube deposits: Below oil level None At and above oil level L var		
			Breakpoint Data		
			Neut. no. 72+ hr 100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 401 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 327-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-19 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	12.49	—	3.21	0.12	
24 hr	13.34	6.8	3.36	2.56	
40 hr	13.67	9.4	3.42	3.94	
48 hr	13.80	10.5	3.44	4.27	
64 hr	14.00	12.1	3.45	4.71	
72 hr	14.19	13.6	3.50	5.33	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % Trace		
			Tube deposits: Below oil level L var At and above oil level L var		
			Breakpoint Data		
			Neut. no. 71 hr 100°F vis 72+ hr		
			Test Conditions		
			Sample temperature, °F 401 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		

TEST NO. 327-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-21 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	12.92	-	3.15	0.14	4	
24 hr	14.01	8.4	3.33	1.11		
40 hr	14.31	10.8	3.37	1.47		
48 hr	14.44	11.8	3.40	1.51		
64 hr	14.77	14.3	3.44	1.71		
72 hr	15.01	16.2	3.48	2.33		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	None	
	Ti	0.00		Centrifuge, vol %	None	
	Ag	+0.02		Tube deposits:	Below oil level	None
	Steel	-0.04			At and above oil level	None
	Cu	-0.08				
	Mg	+0.06				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data			
	Ti	L brown	Neut. no.	71 hr		
	Ag	No change		100°F vis	72+ hr	
	Steel	L green	Test Conditions			
	Cu	L yellow	Sample temperature, °F	401		
	Mg	No change		Sample volume, ml	200	
		Air rate, liter/hr	10			
		Condensate return	Yes			

TEST NO. 327-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-24 AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	13.04	-	3.47	1.24	10	
24 hr	13.13	0.7	3.43	2.87		
40 hr	13.86	6.3	3.49	10.24		
48 hr	15.39	18.0	3.72	15.99		
64 hr	19.99	53.3	4.44	27.7		
72 hr	24.22	85.7	5.16	34.6		
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.04	Sludge in oil:	200-mesh filter	None	
	Ti	-0.02		Centrifuge, vol %	None	
	Ag	-0.08		Tube deposits:	Below oil level	None
	Steel	-0.10			At and above oil level	L var
	Cu	-0.36				
	Mg	-15.5				
Metal discoloration, deposits, pitting, or etching:	Al	No change	Breakpoint Data			
	Ti	L brown	Neut. no.	15 hr		
	Ag	L brown		100°F vis	40 hr	
	Steel	L purple	Test Conditions			
	Cu	L etching	Sample temperature, °F	401		
	Mg	H pitting & etching		Sample volume, ml	200	
		Air rate, liter/hr	10			
		Condensate return	Yes			

TEST NO. 327-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON L-1136^(a) AT 401°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.04	-	4.13	0.16	10
24 hr	15.20	-5.2	3.86	2.19	
40 hr	17.01	+6.0	3.97	13.65	
48 hr	19.08	+19.0	4.31	18.53	
64 hr	25.07	+56.3	5.27	26.1	
72 hr	30.57	+90.6	6.18	32.0	
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :	Al	+0.06	Sludge in oil: 200-mesh filter Centrifuge, vol %	Trace Trace	
	Ti	0.00			
	Ag	-0.02			
	Steel	-0.02			
	Cu	-4.12			
	Mg	-5.52			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Tube deposits: Below oil level At and above oil level	L var M & H var	
	Ti	Blue			
	Ag	L yellow			
	Steel	L green			
	Cu	M pitting & L etching			
	Mg	H pitting			
			Breakpoint Data		
			Neut. no. 17 hr 100°F vis 34 hr		
			Test Conditions		
			Sample temperature, °F 401 Sample volume, ml 200 Air rate, liter/hr 10 Condensate return Yes		
(a) Blend (1:1) of O-67-7 and O-67-9.					

TEST NO. 328-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1011 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.73	-	3.36	0.02	
72 hr	16.32	10.8	3.62	1.68	
120 hr	19.85	34.8	4.19	6.16	
168 hr	38.33	160	7.50	14.33	11
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace		
			Centrifuge, vol % 10.4		
			Tube deposits: Below oil level H var & L carbon		
			At and above oil level None		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F 428		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 328-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1011 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.73	—	3.36	0.02	
72 hr	20.07	36.3	4.28	5.39	
120 hr	40.34	174	7.52	15.61	
168 hr	(a)	—	(a)	22.8	17
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter (a) Centrifuge, vol % (a)		
Al +0.16			Tube deposits: Below oil level M var		
Ti 0.00			At and above oil level H carbon		
Ag +0.04					
Steel -0.06					
Cu -0.18					
Mg (b)					
Metal discoloration, deposits, pitting, or etching.			Test Conditions		
Al L brown			Sample temperature, °F 428		
Ti No change			Sample volume, ml 200		
Ag L yellow			Air rate, liter/hr 10		
Steel Brown			Condensate return Yes		
Cu Brown					
Mg (b)					
(a) Semisolid; analysis not possible.					
(b) Specimen destroyed.					

TEST NO. 329-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1011 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.73	—	3.36	0.02	
16 hr	15.14	2.8	3.43	0.47	
24 hr	15.34	4.1	3.46	0.59	
40 hr	15.82	7.4	3.55	0.84	
48 hr	16.04	8.9	3.58	1.22	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % 0.4		
			Tube deposits: Below oil level L var At and above oil level L & M var		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching.			Sample temperature, °F 428		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 329-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1012 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	26.86	-	5.33	0.37	
1 hr	30.58	13.8	5.70	1.91	
24 hr	32.03	19.2	5.88	28.1	
40 hr	35.17	50.9	6.28	29.1	
48 hr	37.52	39.7	6.57	37.6	5
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			0.6		
			Tube deposits: Below oil level		
			L var		
			At and above oil level		
			M & H var		
Metal discoloration, deposits, pitting, or etching:			Test Conditions		
			Sample temperature, °F		
			428		
			Sample volume, ml		
			200		
			Air rate, liter/hr		
			10		
			Condensate return		
			Yes		

TEST NO. 329-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-65-44 AT 428°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %	
Initial	16.17		4.27	0.27		
16 hr	15.18	-6.1	3.90	4.35		
24 hr	15.47	-4.3	3.89	12.76		
40 hr	21.12	+30.6	5.09	14.76		
48 hr	69.81	+332	18.53	15.89	6	
Metal Specimen Data			Test Cell Data			
Weight change, mg/cm ² :	Al	+0.02	Sludge in oil:	200-mesh filter	Trace ^(a) 40.0	
	Ti	0.00		Centrifuge, vol %		
	Ag	+0.08		Tube deposits:	Below oil level	L var M & H var
	Steel	+0.06			At and above oil level	
	Cu	-5.48				
	Mg					
Metal discoloration, deposits, pitting, or etching:	Al	L brown	Test Conditions			
	Ti	Blue	Sample temperature, °F	428		
	Ag	L brown	Sample volume, ml	200		
	Steel	Yellow	Air rate, liter/hr	10		
	Cu	H etching	Condensate return	Yes		
	Mg					
(a) Coagulated upon filtration.						

TEST NO. 330-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON G-1033 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	351.6		13.02	0.03	
16 hr	475.2	35.2	14.76	0.25	
24 hr	629.4	79.0	16.77	0.27	
40 hr	1154	228	22.42	0.27	
48 hr	1574	348	26.30	0.40	3
Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data
Weight change, mg/cm ² :	Al	+0.04	+0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	0.00	0.00		None
	Ag	-0.36	-0.41	Tube deposits: Below oil level At and above oil level	None
	Steel	+0.02	-0.06		L. var
	Cu	-0.95	-1.54		
	Mg	+0.04	-0.06		
Metal discoloration, deposits, pitting, or etching:	Al	L yellow	Test Conditions	Sample temperature, °F	608
	Ti	L yellow		Sample volume, ml	200
	Ag	L etching		Air rate, liter/hr	10
	Steel	Black		Condensate return	Yes
	Cu	L etching			
	Mg	No change			

TEST NO. 330-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON G-1033 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	351.6		13.02	0.03	
16 hr	471.5	34.1	14.69	0.28	
24 hr	611.4	73.9	16.60	0.34	
40 hr	1100	213	21.93	0.33	
48 hr	1502	327	25.65	0.34	2

Metal Specimen Data				Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	+0.06	+0.06	Sludge in oil: 200-mesh filter Centrifuge, vol %	None None		
	Ti	+0.04	+0.04				
	Ag	+0.02	-0.08				
	Steel	+0.02	-0.04				
	Cu	-1.24	-1.58				
	Mg	+0.06	-0.12				
Metal discoloration, deposits, pitting, or etching:	Al	I. yellow	Test Conditions				
	Ti	Yellow-brown					
	Ag	Black					
	Steel	Black					
	Cu	L. etching					
	Mg	L. brown					
Sample temperature, °F		608					
Sample volume, ml		200					
Air rate, liter/hr		10					
Condensate return		Yes					

TEST NO. 330-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	---	12.88	0.00	
16 hr	475.6	34.2	14.75	0.35	
24 hr	597.3	68.5	16.38	0.34	
40 hr	1062	200	21.52	0.34	
48 hr	1460	312	25.29	0.31	3

Metal Specimen Data				Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	+0.04	+0.04	Sludge in oil:	200-mesh filter	None	
	Ti	0.00	0.00		Centrifuge, vol %	None	
	Ag	-0.36	-0.36		Tube deposits:	Below oil level	None
	Steel	0.00	-0.10			At and above oil level	L & M var
	Cu	-1.03	-1.60				
	Mg	+0.10	-0.16				
Metal discoloration, deposits, pitting, or etching:	Al	L yellow		Test Conditions	Sample temperature, °F	608	
	Ti	L yellow			Sample volume, ml	200	
	Ag	L etching			Air rate, liter/hr	10	
	Steel	Black			Condensate return	Yes	
	Cu	L etching					
	Mg	L brown					

TEST NO. 330-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	474.8	33.9	14.70	0.36	
24 hr	626.8	76.8	16.72	0.34	
40 hr	1128	218	22.08	0.31	
48 hr	1558	339	26.17	0.53	3

Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data		
Weight change, mg/cm ² :	Al	+0.06	+0.06		Sludge in oil:	200-mesh filter Centrifuge, vol %	None None
	Ti	+0.02	+0.02				
	Ag	-0.36	-0.47				
	Steel	+0.04	-0.10		Tube deposits:	Below oil level	None
	Cu	-0.99	-1.54			At and above oil level	L var
	Mg	+0.02	-0.14				
Metal discoloration, deposits, pitting, or etching:			Al	L yellow	Test Conditions		
	Ti	L yellow			Sample temperature, °F	608	
	Ag	L etching			Sample volume, ml	200	
	Steel	Black			Air rate, liter/hr	10	
	Cu	L pitting			Condensate return	Yes	
	Mg	L brown					

TEST NO. 330-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Nett. No., mg KOH/g	Oil Loss, wt %	
Initial	357.6		13.02	0.01		
16 hr	388.3	8.6	13.45	0.20		
24 hr	395.9	10.7	13.60	0.20		
40 hr	407.5	14.0	13.76	0.13		
48 hr	411.9	15.2	13.87	0.12	3	
Metal Specimen Data				Test Cell Data		
Weight change, mg/cm ² :	Al	+0.04	+0.04	Sludge in oil:	200-mesh filter	None
	Ti	+0.04	+0.04		Centrifuge, vol %	None
	Ag	-0.06	-0.10	Tube deposits:	Below oil level	None
	Steel	0.00	-0.04		At and above oil level	L var
	Cu	-0.04	-0.37			
	Mg	-0.02	-0.18			
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions			
	Ti	L yellow	Sample temperature, °F	608		
	Ag	No change	Sample volume, ml	200		
	Steel	Black	Air rate, liter/hr	10		
	Cu	L pitting	Condensate return	Yes		
	Mg	No change				

TEST NO. 330-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Nett. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	2
16 hr	387.3	8.3	13.42	0.16	
24 hr	394.6	10.3	13.56	0.10	
40 hr	407.9	14.1	13.76	0.12	
48 hr	411.8	15.2	13.86	0.12	
Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data
Weight change, mg/cm ² :	Al	+0.02	+0.02	Sludge in oil: 200-mesh filter Centrifuge, vol % Tube deposits: Below oil level At and above oil level	None
	Ti	0.00	0.00		None
	Ag	-0.06	-0.06		
	Steel	+0.04	0.00		
	Cu	-0.10	-0.47		
	Mg	-0.02	-0.16		
Metal discoloration, deposits, pitting, or etching.	Al	No change	Test Conditions	Sample temperature, °F	608
	Ti	L yellow		Sample volume, ml	200
	Ag	No change		Air rate, liter/hr	10
	Steel	Black		Condensate return	Yes
	Cu	L pitting			
	Mg	No change			

TEST NO. 331-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON G-1033 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	351.6	—	13.02	0.03	
16 hr	473.1	34.6	14.75	0.11	
24 hr	601.3	71.0	16.50	0.17	
40 hr	1064	203	21.47	0.65	
48 hr	1476	320	25.31	0.50	3
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	+0.04	-0.06	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	-0.04	-0.08		None
	Ag	-0.28	-0.75	Tube deposits: Below oil level At and above oil level	None
	Steel	+0.04	-0.12		L var
	Cu	-1.05	-1.44		
	Mg	-0.02	-0.06		
Metal discoloration, deposits, pitting, or etching:	Al	No change		Test Conditions	
	Ti	L yellow		Sample temperature, °F	608
	Ag	L etching		Sample volume, ml	200
	Steel	No change		Air rate, liter/hr	10
	Cu	L etching		Condensate return	Yes
	Mg	Gray			

TEST NO. 331-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON G-1033 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	351.6	—	13.02	0.03	
16 hr	475.8	35.3	14.77	0.07	
24 hr	628.6	78.8	16.81	0.45	
40 hr	1195	240	22.72	0.67	
48 hr	1699	383	27.12	0.66	2
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	+0.02	-0.06	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	+0.04	0.00		None
	Ag	-0.22	-0.69	Tube deposits: Below oil level At and above oil level	None
	Steel	+0.08	-0.08		L var
	Cu	-1.20	-1.52		
	Mg	+0.04	-0.18		
Metal discoloration, deposits, pitting, or etching:	Al	No change		Test Conditions	
	Ti	L yellow		Sample temperature, °F	608
	Ag	L etching		Sample volume, ml	200
	Steel	No change		Air rate, liter/hr	10
	Cu	L etching		Condensate return	Yes
	Mg	No change			

TEST NO. 331-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.3	—	12.88	0.00	
16 hr	473.6	33.6	14.72	0.11	
24 hr	609.4	71.9	16.56	0.50	
40 hr	1080	205	21.86	0.48	
48 hr	1545	336	25.90	0.53	3
Metal Specimen Data					
Weight change, mg/cm ² :		Normal Cleaning	Electro- cleaning	Test Cell Data	
		Al	-0.10	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
		Ti	-0.06		None
		Ag	-0.77	Tube deposits: Below oil level At and above oil level	None
		Steel	-0.12		L var
		Cu	-1.46		
		Mg	-0.14	Test Conditions	
Metal discoloration, deposits, pitting, or etching:		Al	No change	Sample temperature, °F	608
		Ti	L yellow	Sample volume, ml	200
		Ag	L etching	Air rate, liter/hr	10
		Steel	No change	Condensate return	Yes
		Cu	L etching		
		Mg	No change		

TEST NO. 331-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON F-1041 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	354.5	—	12.88	0.00	
16 hr	474.9	34.0	14.70	0.08	
24 hr	612.1	72.7	16.57	0.53	
40 hr	1114	214	21.91	0.72	
48 hr	1534	333	25.85	0.75	3
Metal Specimen Data					
Weight change, mg/cm ² :		Normal Cleaning	Electro- cleaning	Test Cell Data	
		Al	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
		Ti	0.00		None
		Ag	-0.43	Tube deposits: Below oil level At and above oil level	None
		Steel	-0.14		L var
		Cu	-1.40		
		Mg	-0.14	Test Conditions	
Metal discoloration, deposits, pitting, or etching:		Al	No change	Sample temperature, °F	608
		Ti	L yellow	Sample volume, ml	200
		Ag	L etching	Air rate, liter/hr	10
		Steel	No change	Condensate return	Yes
		Cu	L etching		
		Mg	No change		

TEST NO. 331-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	2
16 hr	390.3	9.1	13.48	0.04	
24 hr	396.0	10.7	13.60	0.13	
40 hr	408.4	14.2	13.79	0.12	
48 hr	412.3	15.3	13.87	0.13	
Metal Specimen Data			Normal Cleaning	Electro- cleaning	Test Cell Data
Weight change, mg/cm ² :	Al	-0.02	-0.04	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	0.00	-0.06		None
	Ag	+0.04	-0.26	Tube deposits: Below oil level At and above oil level	None
	Steel	-0.02	-0.08		L var
	Cu	-0.20	-0.53		
	Mg	-0.10	-0.16		
Metal discoloration, deposits, pitting, or etching:	Al	No change	Test Conditions	Sample temperature, °F	608
	Ti	L yellow		Sample volume, ml	200
	Ag	L etching		Air rate, liter/hr	10
	Steel	No change		Condensate return	Yes
	Cu	L etching			
	Mg	No change			

TEST NO. 331-6. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-67-1 AT 608°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	357.6	—	13.02	0.01	3
16 hr	390.3	9.1	13.46	0.06	
24 hr	395.0	10.5	13.58	0.19	
40 hr	408.7	14.3	13.79	0.20	
48 hr	412.8	15.4	13.85	0.14	
Metal Specimen Data		Normal Cleaning	Electro- cleaning	Test Cell Data	
Weight change, mg/cm ² :	Al	-0.02	-0.02	Sludge in oil: 200-mesh filter Centrifuge, vol %	None
	Ti	+0.04	0.00		None
	Ag	+0.02	-0.24	Tube deposits: Below oil level At and above oil level	None
	Steel	-0.02	-0.08		L var
	Cu	-0.24	-0.45		
	Mg	-0.06	-0.10		
Metal discoloration, deposits, pitting, or etching:	Al	No change		Test Conditions	
	Ti	L yellow		Sample temperature, °F	608
	Ag	L etching		Sample volume, ml	200
	Steel	No change		Air rate, liter/hr	10
	Cu	L etching		Condensate return	Yes
	Mg	No change			

TEST NO. 333-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON MLO-62-1011 AT 464°F

	Via, cc/100°F	100°F Via Increase, %	Via, cc/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.73	—	3.36	0.02	
16 hr	15.35	4.2	3.45	1.13	
24 hr	15.67	6.0	3.51	1.29	
40 hr	16.58	12.6	3.64	2.31	
48 hr	17.98	22.1	3.85	5.71	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Trace Centrifuge, vol % 1.0		
			Tube deposits: Below oil level H var & L carbon At and above oil level None		
			Test Conditions		
Metal discoloration, deposits, pitting, or etching:			Sample temperature, °F 464		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 334-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-829 AT 385°F

	Via, cc/100°F	100°F Via Increase, %	Via, cc/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.88	—	3.47	0.27	
16 hr	14.19	2.2	3.52	0.81	
24 hr	14.27	2.8	3.54	1.02	
40 hr	14.35	3.2	3.55	1.47	
48 hr	14.34	3.3	3.55	1.77	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter None Centrifuge, vol % None		
			Tube deposits: Below oil level None At and above oil level L var		
			Breakpoint Data		
Metal discoloration, deposits, pitting, or etching:			Neut. no. 48+ in		
			100°F via 49+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 334-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-830 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.62	—	3.39	0.80	
16 hr	13.95	2.4	3.46	1.07	
24 hr	14.07	3.3	3.47	1.30	
40 hr	14.94	9.7	3.63	3.61	
48 hr	17.44	28.0	4.03	9.68	2
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			2.0		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			1. var		
			Breakpoint Data		
			Neut. no. 30 hr		
			100°F vis 40 hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 334-3. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-831 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	14.52	—	3.48	0.28	
16 hr	15.60	7.4	3.65	0.58	
24 hr	15.66	7.9	3.67	0.78	
40 hr	15.86	9.2	3.70	0.94	
48 hr	15.60	7.4	3.71	1.01	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Trace		
			Centrifuge, vol %		
			0.6		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			1. var		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 334-4. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-832 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.76	—	3.37	0.31	
16 hr	14.53	5.6	3.49	0.50	
24 hr	14.67	6.6	3.52	0.74	
40 hr	14.88	8.1	3.55	0.83	
48 hr	14.92	8.4	3.56	1.10	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter Centrifuge, vol %		
			Trace		
			0.4		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			L var		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 334-5. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-68-5 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	16.27	—	4.01	0.20	
16 hr	16.79	3.2	4.06	0.42	
24 hr	16.90	3.9	4.07	0.70	
40 hr	16.99	4.4	4.05	0.77	
48 hr	16.96	4.2	4.04	1.03	0
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² :			Sludge in oil: 200-mesh filter		
			Centrifuge, vol %		
			None		
			Tube deposits: Below oil level		
			None		
			At and above oil level		
			None		
			Breakpoint Data		
			Neut. no. 48+ hr		
			100°F vis 48+ hr		
			Test Conditions		
			Sample temperature, °F 385		
			Sample volume, ml 200		
			Air rate, liter/hr 10		
			Condensate return Yes		

TEST NO. 335-1. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON O-68-6 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.10	—	3.19	0.29	
16 hr	13.88	6.0	3.32	1.14	
24 hr	14.13	7.9	3.36	1.39	
40 hr	15.63	19.3	3.57	4.89	
48 hr	17.63	34.6	3.85	9.43	4
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al 0.00 Ti +0.04 Ag 0.00 Steel 0.00 Cu -0.69 Mg 0.04 Metal discoloration, deposits, pitting, or etching: Al No change Ti L brown Ag L yellow Steel Blue Cu L pitting Mg No change			Sludge in oil:	200-mesh filter Centrifuge, vol %	None None
			Tube deposits:	Below oil level At and above oil level	None None
			Breakpoint Data		
			Neut. no.	26 hr	
			100°F vis	36 hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

TEST NO. 335-2. RESULTS OF REFLUX OXIDATION-CORROSION TEST ON ATL-833 AT 385°F

	Vis, cs/100°F	100°F Vis Increase, %	Vis, cs/210°F	Neut. No., mg KOH/g	Oil Loss, wt %
Initial	13.53	—	3.48	2.22	
16 hr	13.77	1.8	3.52	3.13	
24 hr	13.88	2.6	3.54	3.55	
40 hr	14.04	3.8	3.56	4.01	
48 hr	14.10	4.2	3.56	4.35	3
Metal Specimen Data			Test Cell Data		
Weight change, mg/cm ² : Al +0.02 Ti 0.00 Ag 0.00 Steel 0.00 Cu -0.14 Mg 0.00 Metal discoloration, deposits, pitting, or etching: Al No change Ti L brown Ag L yellow Steel L brown Cu L brown Mg No change			Sludge in oil:	200-mesh filter Centrifuge, vol %	None None
			Tube deposits:	Below oil level At and above oil level	None
			Breakpoint Data		
			Neut. no.	48+ hr	
			100°F vis	48+ hr	
			Test Conditions		
			Sample temperature, °F	385	
			Sample volume, ml	200	
			Air rate, liter/hr	10	
			Condensate return	Yes	

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